THE CLIMATE AND CONDITION OF SCHOOLING IN THE HIGH SCHOOL: A PERSPECTIVE OF ONE FLORIDA COUNTY SINCE THE R.A.I.S.E. AND EDUCATIONAL REFORM ACTS OF 1983

BY

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The public schools reform movement has led to a proliferation of reports, recommendations, and legislation in the United States. The Raise Academics in Secondary Education (R.A.I.S.E.) and Education Reform Acts of Florida in 1983 changed existing laws and created new requirements for the public high school diploma, e.g., minimum overall 1.5 GPA (Grade Point Average) for courses completed and a 7-period day, as well as increased academic credit and course requirements.

Successful implementation of reforms depends heavily on the attitudes of the local school educators and students. The purpose of this study was to determine if there was a significant difference of

opinion among administrators, counselors, students, and teachers in the public secondary schools toward the mandated reforms. A random sample of educators and students was selected to participate in an opinion survey which followed a Likert format for the reform categories of GPA, increased course and credit requirements, 7-period day, and requirements for participation in extracurricular activities. A longitudinal study of ninth grade pre-R.A.I.S.E. and post-R.A.I.S.E. students was incorporated in this investigation to identify any changes in academic performance as measured by the Comprehensive Test of Basic Skills (CTBS). A literature review related to the impact of reform movements towards standards of excellence in achievement of public secondary students was conducted as well as a demographic review of Brevard County, Florida, which provided the background for this study.

Six questions were addressed for significance in this study, supported by the opinion survey results, and a longitudinal review of pre-R.A.I.S.E. and post-R.A.I.S.E. students' total battery CTBS scores. The research questions associated with GPA, increased credit requirements, increased course requirements, and academic achievement were found significant at the $p = .05$ level. Research questions associated with the

7-period day and requirements for participation in extracurricular activities were not found significant. It was concluded from this study that responses from the sampled populations support the need to survey the affected educational populace prior to legislative mandates or implementation of mandates so as to embrace those members that are most affected by legislative action.

CHAPTER 1
INTRODUCTION

The call to excellence for our nation's schools has been brought about by numerous commissions' reports of the states' task teams reflecting on the preparedness of public school children. The National Commission on Excellence in Education (1983) stated in its report to Americans, A Nation at Risk: The Imperative for Educational Reform, that "our nation is at risk" and that we have been committing "unthinking, unilateral, educational disarmament" (p. 5). The members of this commission also reported that the educational foundations of our society were being eroded by a "rising tide of mediocrity that threatens our very future as a nation and as a people" (p. 5). Reinforcement of this assessment was presented by Anderson and Ward (1983), in their survey of the National Assessment of Educational Progress: Report of The Center for Public Resources, where they examined education and the demands of this nation's changing economic situation.

The call to excellence for our nation's schools by numerous commission reports since 1983 has brought

education back into the forefront of policymakers at the state and national levels. In 1983, as a result of Japanese advances in industrial technologies, the National Science Board (NSB) of the National Science Foundation (NSF) proposed reforms of the mathematics, sciences, and technologies curricula (1983). Through the efforts of these groups, as well as the Task Force on Education for Economic Growth (1983), increased graduation requirements for secondary public school students have resulted throughout the nation. The recommendations of the commissions' reports for the nation can be categorized into the four areas: (a) course content, (b) expectations, (c) use of time, and (d) student achievement (National Commission on Excellence, 1983, p. 18). These recommendations impacted primarily the number of credits required in the regular academic curricula, e.g., mathematics, language arts, science, and social studies; only Colorado, Iowa, Maryland, Massachusetts, Nebraska, and Wyoming have abstained from state mandated requirements (Pipho, 1986).

Responding to the national concern and growing demand for more accountability in the public schools, the Florida legislature passed accountability laws from 1969 through 1976. Florida's Educational Accountability

Act (1976) established minimum student performance standards and provided for the development of a student assessment program. In taking notice of industry's call for a literate populous, the Florida legislature required the implementation of major reforms in 1983 for the 67 public school districts of the state. This reform action, which primarily affected the secondary school level, was mandated as a result of the 1983 legislative action implementing Chapter 83-324, the R.A.I.S.E. Act (Raising Achievement in Secondary Education) and Chapter 83-327, the Education Reform Act. The primary emphasis of the R.A.I.S.E. and Education Reform Acts revised and increased graduation requirements in grades 9 through 12.

The provisions of the R.A.I.S.E. Act were separated into four parts: (a) Standards of Student Achievement, (b) School District Management, (c) Coordination of Vocational Education, and (d) State Education Policy. The Florida Education Reform Act of 1983 was also separated into four parts: (a) Mathematics, Science, and Computer Education; (b) Extension of the School Day; (c) Florida Merit Compensation Program; and (d) the Educational Reform Study Commission.

Prior to, and after the report, A Nation at Risk: The Imperative for Educational Reform, the leaders of

the Brevard County Public School District of Florida had taken definitive measures to raise standards of education by commitment in policy and practice to program improvement, high expectations, and increasing standards. When the Brevard County Public School Board developed a county-wide policy with respect to grades and credit/course requirements for graduation, the recommendations of the National Commission afforded a sanction to the posture the Brevard Public School Board had taken (Brevard County School Board, 1984, 1988).

Purpose of the Study

The purpose of this study was to examine the opinions of school principals, counselors, teachers, and students in the public secondary schools of Brevard County with regard to Florida's R.A.I.S.E. and Education Reform Acts. In 1984, the Florida legislature passed Chapter 84-336, the Omnibus Education Act, which called for an evaluation of the implementation of the R.A.I.S.E. and Education Reform Acts. On July 29, 1986, the Florida Department of Education (DOE) contracted with MGT of America, Inc., to serve as the evaluator of specific program components (MGT, 1987). MGT developed an attitude questionnaire seeking opinions of various groups of educators and students through a sample survey of the state's public school districts. An in-depth

survey of the student population and of educators in Brevard County, Florida, with the adapted MGT questionnaire provided the basic foundation for this study. Standardized achievement test scores of public high school students (n=350/group) in grades 9 through 12 prior to and subsequent to Florida's R.A.I.S.E. and Educational Reform Acts of 1983 have also been included.

Rationale for the Study

The effects of the reform movement, either negative or positive, may not fall evenly on all students. The effects of the R.A.I.S.E. and Education Reform Acts in raising standards for student performance may interact with causal factors of the underachieving or at-risk student to either enhance or diminish their impact. Understanding the opinions of high school students is essential to understanding the impact of increased educational standards on Florida's diverse student body.

An investigation of the opinions of those students impacted by the increased standards for a high school diploma encompassed by more required courses, credits, and a higher grade point average for graduation, may provide some explanation for any changes in their academic performance. Changes in the structure of the progression plan for a diploma in Florida have come from the state mandates; however, changes coming from the

local level to implement the state mandates, and the likelihood of success of these changes rests heavily on the attitudes of the local school administrators, counselors, and teachers. Therefore, an investigation of the opinions of educators, who in turn are also affected by Florida's increased standards, will assist in the formulation of an accurate evaluation of those opinions prevalent with regard to the mandates of the R.A.I.S.E. and Reform Acts in Florida's high schools today since they are held accountable for documentation and implementation of the mandates.

Questions in this Study

An investigation of this topic necessitated a twofold analysis which included responses from educators and students concerning the following questions:

1. Is there a statistically significant difference ($p \leq .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased minimum grade point average (GPA) needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

2. Is there a statistically significant difference ($p \leq .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased number of total credits needed for

graduation since the Florida R.A.I.S.E. and Education Reform acts?

3. Is there a statistically significant difference ($p \leq .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?.

4. Is there a statistically significant difference ($p \leq .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

5. Is there a statistically significant difference ($p \leq .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

6. Have achievement levels among secondary students, as measured by the Comprehensive Test of Basic Skills (CTBS), in grades 9 through 11 of the Brevard County Public Schools, changed significantly ($p \leq .05$) subsequent to implementation of the R.A.I.S.E. and Education Reform Acts of Florida?

Delimitations

The records and opinions of students as well as the opinions of educators in Florida's Brevard Public School District were studied observing the following confinements:

1. The sample for this study was selected from only those public high school students, teachers, counselors, and administrators housed in grades 9 through 12 within the school district of Brevard County, Florida.

2. The study presented the opinions of secondary administrators, counselors, teachers, and students in the public sector of Brevard County, Florida, after implementation of the 1983 R.A.I.S.E. and Education Reform Acts of Florida.

3. No attempt was made to show a direct causal relationship between the R.A.I.S.E. and Education Reform Acts and student achievement.

4. Public school students' records of the Comprehensive Test of Basic Skills (CTBS) total battery scores for grades 9 through 11 were taken from archival records for school years 1980-83 and 1983-86.

Limitations

The researcher used opinion surveys as well as ex post facto data; the following threats to validity are recognized for this study:

1. The opinion survey was directed to only public school students and educators at the secondary level. Therefore, data from this survey will have limited relevance at the elementary school level.

2. The researcher could not be sure that the individual was expressing his or her true opinion rather than a "socially acceptable" attitude (Gay, 1976, p. 99).

3. Test validity of the CTBS could have been threatened by sensitization of pre-1984 students' exposure to the same CTBS test (form S) for grades 9, 10, and 11.

4. A change in the CTBS forms and level usage after 1983-84 school year created limitations for a comparative analysis of the two forms to the extent that normal curve equivalents (NCE) for the CTBS will be utilized.

5. Ability to generalize achievement findings based on the CTBS results of Brevard County, Florida, to other school districts may be limited to those with

student populations similar to those in the sample and to those states with similar mandates.

6. The progression plan for Brevard County public school students during school years 1980-83 limited attendance to a six-period day of 55 minutes per period. During school years 1983-88, the progression plan mandated a seven-period day of 50 minutes per period. This change in the county's progression plan and the results to be presented in this study may be applicable only to other districts in the state with similar progression plans.

7. Brevard's public school student population may be a unique population due to the impact of high-technology corporations in the area supporting the Kennedy Space Center and Patrick Air Force Base.

8. The small sample size of administrators and counselors could yield a statistical bias.

Definition of Terms

The following terms are defined according to usage in the study to provide clarity and consistency:

Attitude. An attitude is a generalized response to a particular group, institution, concept, or object of a favorable-unfavorable dimension (Sax, 1974, p. 398).

Comprehensive Test of Basic Skills. The Comprehensive Test of Basic Skills (CTB/McGraw-Hill,

1977, 1984) is a norm-referenced standardized achievement test which measures a student's performance in the following general subject areas: reading, language, mathematics, reference skills, science, and social studies.

Normal Curve Equivalent. The normal curve equivalents (NCE) for a standardized achievement test are standard scores based on a scale ranging from 1 through 99 and coincide with the national percentile scale at 1, 50, and 99 (CTB/McGraw-Hill, 1977).

Scale Scores. Scale scores are units of a single, equal-interval scale ranging from 0 through 999 that are applied across all levels of the standardized achievement test regardless of grade level or time of year tested (CTB/McGraw-Hill, 1977).

Student Achievement. Student achievement for this study is to be reflected by a student's CTBS total battery scores normed at the 50th percentile as the national average.

Significance of the Study

Educators and members of school boards are implementing standards affecting the minimum total credits and acceptable academic achievement of students to justify the awarding of a high school diploma as called for by numerous commission reports. Natriello,

McDill, and Pallas (1985) see the commissions' calls for higher standards in curricular content, learning time and achievement levels as based upon five assumptions:

> (1) current standards are too low, (2) more demanding content and more time allocated to school will lead to greater individual student effort, (3) greater student effort will lead to improved achievement, (4) the relationships between standards and effort and between effort and achievement will hold for all students, and (5) no negative consequences will be associated with the more demanding standards. (p. 12)

The R.A.I.S.E. and Education Reform Acts of Florida in 1983 changed existing laws and created new requirements for the public high school diploma in Florida to provide for increased accountability of the schools to the public. Prior to these reform acts, the following standards existed in the public school districts of Florida: (a) Graduation requirements in Florida were established by each of the districts in their pupil progression plan, (b) a statewide GPA requirement was nonexistent but districts generally did require a 1.0 GPA for graduation, and (c) the length of the school day and year was defined only as 180 days or equivalent hours for grades K through 12 with each district determining the number of classes met per day.

In a 1986 U.S. Department of Education statistical report The Condition of Education, the total credits needed for graduation and specific course credit

requirements for each of the states were identified. Florida led the nation at that time in both areas identified and maintains that position (p.224).

The Florida state legislators, by implementation of the R.A.I.S.E. and Educational Reform Acts, have created demands and possible conflicts for students: A longer school day and year may provide for increased achievement, but it is not a guarantee that a greater amount of time will be spent on assigned tasks. The amount of increased time spent by the low-ability students may preclude their participation in an extracurricular activity which may have been the holding power for that category of student body.

As with many educational programs, public secondary school administrators, teachers, and students may display an exuberance or a reluctance to change and may produce either a positive or negative impact on academic achievement. Knowing the opinions of the local public secondary school populous may aid the state of Florida legislators and Department of Education administrators in evaluating the impact of the R.A.I.S.E. and Education Reform acts. An inspection of local high schools' students' standardized achievement test scores and an analysis of administrators', counselors', students', and teachers', opinions towards the new graduation

requirements may provide information that could preclude other state governing members from making similar laws until evaluative tools have been established. Findings will relate to state mandated policies regarding increased credit requirements, minimum GPA, length of school day, and total credits required for graduation.

Research Procedures

Sampling Plan

The target population of this study for research questions one through five consisted of male and female high school students, administrators, counselors, and teachers in a Florida public high school setting for grades 9-12 for the school year 1988-89. The student sample to be surveyed (n=250) included a proportionate random sample of Brevard County's public school students relative to the total membership by grade level who attend any one of the five, 4-year high schools.

Administrator, counselor, and teacher sample populations to be surveyed were also from the five, 4-year high schools in the Brevard public school district. In keeping with the procedures for administering the opinion surveys as developed by MGT, Inc. (1986), administrator and counselor samples included all of the principals (n=5), assistant principals (n=8), and counselors (n=18) within the five,

4-year public high schools of Brevard County, Florida. Teacher samples to be surveyed were from all of the department chairpersons (n=21) within the five targeted, 4-year public high schools of Brevard County, Florida.

The target population for research question six consisted of male and female high school students who were enrolled in a Florida 4-year public high school. The sample of students included those who were enrolled in grades 9-11 in the Brevard County public school system and housed in a 4-year senior high school setting for school years 1980-1983 and 1983-1986, respectively. The targeted schools for the Brevard public school district included six high schools which housed grades 9-12 located in the north (two schools), central (three schools), and south (one school) portions of the district. Two groups of 350 ninth grade students were selected proportionately at random relative to the total public school membership of Brevard County secondary schools that house grades 9-12, for school years 1980 and 1983, respectively, from each of the targeted schools. A microcomputer software package titled "Statpac Gold" by Walonick Associates, Inc. (1986) was used to determine the random numbers for the selection of the samples.

Data Collection

The following steps were used to obtain data for this study:

1. A Likert-type survey of 20 statements, adopted from MGT, Inc.'s form, was provided to allow for opinions of high school administrators, guidance counselors, teachers, and students. These surveys, with a cover letter and directions for completion, were mailed to each principal of the targeted schools. Surveys were returned through courier serivce of the Brevard County public schools.

2. Students' grade levels and CTBS total battery scores were taken from archival records. These scores of grades 9 through 11 for each of the groups identified in Brevard County, Florida, from 1980-83 and 1983-86 were used for research question six.

Data Analyses

After drawing the sample from the targeted educators and students and collecting data from students' archival records, the following procedures were followed for analysis:

1. The Likert-type survey items for the respondent groups were compiled and formatted into a tabular manner of group means and standard deviations. The survey items were separated into five categories with the

following numeration configuration: (a) graduation requirements = items 1, 2, 6, and 9; (b) minimum G.P.A. = items 12, 13, 14, and 18.; (c) number of credits = items 4, 5, 11, and 17; (d) number of periods = items 3, 8, 10, and 16; (e) extracurricular involvement = items 7, 15, 19, and 20.

Each of the responses was assigned a value of one to five based upon the range from the Likert scale of strongly agree to strongly disagree. A mean score for each sampled group (e.g., administrators, counselors, teachers, and students) with respect to the opinion areas (e.g., minimum GPA, number of credits, number of periods, graduation requirements, and extracurricular involvement) was used in a one-way analysis of variance (ANOVA) to analyze the data for each grade level of student group with respect to administrators, counselors, and teachers. In order to test for the assumption of equal variances for those calculated F values found to be significant at $p < .05$, the conventional Bartlett's chi-square test on the within-cell variances was used. Follow-up analysis using *t*-tests between all the combinations of means where the F-ratio was found significant at $p < .05$ was used for the between-cell means.

2. A two-factor ANOVA for each group of grade level students and measure of achievement (CTBS) was used for the longitudinal review of students from 1980-83 and 1983-86 respectively. Follow up analyses were by a *t*-test for those means found to be significant at $p < .05$ for the between-cell means. The statistical analysis software package "Statpac Gold" by Walonick Associates, Inc. (1986) was used to perform procedures necessary for analyses.

Organization of the Remainder of the Study

Chapter 2 will focus on a review of literature related to the impact of reform movements on standards of excellence in achievement of secondary students in the public school setting. A demographic review of Brevard County as well as the design and analytical techniques to be used in this study will be discussed in Chapter 3 including the population sample, criterion measures, and plan for data analyses. Chapter 4 will include the findings of this study with Chapter 5 presenting a discussion of the conclusions drawn from this study as well as prospects for future studies.

CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

The proliferation of past studies by commission and research members has indicated that current efforts for reform of our public schools focused on three major changes. These changes are directly related to the curriculum of the public school: (a) increase the number of required academic courses, (b) promote on the basis of achievement, and (c) increase the time for education (U.S. D.O.E., 1983, 1984, 1988). This review of the literature was organized around these three topics and their effects on students and achievement in the public secondary school.

Social and technological changes over the past 30 years have made an impact on educational standards and the attitudes of those persons responsible for change in the system as well as the students who are served by that system. The multitude of commission reports and studies, the competency movement, and the overriding interest in reported achievement decline have contributed to a base of information upon which change occurred and will continue to do so. This review will

document those changes as well as others in education relative to periods of time when changes were manifested nationally in education and public schools were continually examined.

Early Educational Reform: A Historical Perspective

Reformers of the past two decades have reflected differing philosophical views and have presented educators with speciality programs. Educators have spoken of cyclical reform movements as evidenced by past proponents from the late 1950s through the 1980s. In 1959, James B. Conant published The American High School Today, with 21 recommendations to boards of educations and administrators for changes in the comprehensive high school (p. 41). Conant's book was described as non-controversial by The National Commission on the Reform of Secondary Education (1973). However, Conant did remain a strong advocate of the comprehensive high school and his book an important document in reference to the public's reaction to Russia's launching of Sputnik in 1957.

The period from 1957-60, often called "The Sputnik Era" (Sjogren, 1983), coincided with the post-World War II baby boom and "The Education Decade" (Grambs, 1981), which lasted from 1957-67. Jean D. Grambs documented many of the reforms of this decade with speciality

programs such as individualized instruction, mainstreaming, mastery learning, open-space schools, programmed instruction, sex education, and values clarification. Grambs credited each of these programs with importance but did not see a substantive change in education as a result of them.

Jerome Bruner (1961), in The Process of Education, presented the inquiry approach with emphasis on central concepts of the various academic disciplines designed to promote the development of intellectual power. Bruner spoke of schools as being faced with a "long crisis in national security" and said that "the top quarter of public school students . . . is perhaps the group most neglected by our schools in the recent past" (1961, p. 1, 10). Later, Bruner criticized public schools for neglecting students in the lower quartile when society was looking at the schools to save the "disadvantaged" (Hall, 1970, p. 51).

Education became a national priority as evidenced by the federal government passing of the National Defense Education Act (NDEA) of 1958. This act provided monetary grants to high schools in order to strengthen their mathematics, science, foreign language, and counseling programs (Sjogren, 1983, p. 7).

The National Science Foundation (NSF) of the 1950s and 1960s gave us a discipline-centered inquiry curriculum package with a new chemistry, math, and physics, all in hopes of increasing the proportion of students enrolled in college physics. Ellis (1967), however, in a study of enrollment trends for National Merit finalists over a 10-year period following Russia's launching of Sputnik I, discovered that the number of college students majoring in physics actually declined during the 10 year period following Russia's Sputnik 1.

The discipline-centered reformers of the 1960s were followed in the 1970s by proponents of a child-centered elementary school where students were free to pursue their interests in an open-space classroom. Journalist Charles E. Silberman (1970) is given credit for influencing much of the open-space school reform of the early 1970s. In Crisis in the Classroom: The Remaking of American Education, he proposed to humanize the schools in a reaction to the discipline-centered reforms of the 1960s excellence movement.

As support for the open-space classrooms in the elementary schools widened, another reform movement of public secondary schools was to begin. The middle and late 1970s presented educational reformers with a back to basics conservatism. Committees were formed, and

reports of the National Commission on the Reform of Secondary Education, sponsored by the Kettering Foundation in 1973, and the National Panel on High School and Adolescent Education sponsored by the United States Office of Education in 1976 were generated. The National Commission on Reform of Secondary Education (1973) was charged with making recommendations for change (p. xiv). These committee members viewed public schools as a failure in light of student unrest as documented by the first recorded high school student race riot in White Plains, New York, and the killing of four students at Kent State University (Ohio). They also blamed public schools for rising unemployment and mandated a return to a narrow academic path (p. 27).

The Commission on Reform of Secondary Education issued the Kettering Report in 1973 which set forth 32 recommendations for improving secondary education called the National Goals of Education. Authors of these reports called for reforms that (a) eliminated the comprehensive aspect of the public high school in favor of an academic approach, (b) provided for the formation of alternative schools for those not academically inclined, (c) gave renewed emphasis on mastery of basic skills, (d) provided for the allocation of public monies to businesses to support on-the-job training, and (e)

favored a reduction in the length of the school day (National Commission on Reform of Secondary Ed., 1973).

Tanner (1982) examined the National Commission's proposals and questioned them based on the diversity of the American students. He believed that during the first half century of American education (1900-1950), schools were strong because of a diverse society and stated "whereas the comprehensive high school was conceived early in this century as the prototype of American democracy, it was now being viewed as an impediment to social control and social predestination" (p. 607).

The 1974 Panel on Youth of the President's Science Advisory Committee, chaired by James Coleman, concurred with the Kettering Commission's recommendations. The panel called for specialized high schools to replace the comprehensive high school. Tanner (1982) saw Coleman's earlier works being contradicted since his earlier research advocated heterogeneous grouping (p. 608).

The Kettering Foundation, concerned with deficiencies in the high school as a result of the findings of the 1973 National Commission on the Reform of Secondary Education, appointed another task force in 1974. Their report, Secondary Schools in a Changing Society: This We Believe (NASSP, 1975), provided a

framework for the then state superintendent of California, Wilson Riles, to establish the California Commission for the Reform of Intermediate and Secondary Education (RISE). This commission's task was to provide a plan for revamping of California's public educational system for the next quarter century (California Department of Education, RISE report, 1975, pp. 5-8).

Brodinsky (1979) identified a recurring theme of an equality movement throughout the 1970s which impacted nationally the educational structure. He observed equity issues as having originated from several court cases. Specifically, Brodinsky cited the following cases as having the greatest impact: the California Supreme Court's decision in Serrano v. Priest (1971) which documented the establishment of a new equal protection application to school finance; the Pennsylvania Association of Retarded Children (PARC) v. Commonwealth (1971) which provided a free public education for retarded children in Pennsylvania; the Educational Amendments of 1972, Title IX, which forbid discrimination based upon sex; the due process decisions for students, specifically, Tinker v. Des Moines Independent Community School District (1969), and Goss v. Lopez (1975). These decisions and others during this era provided the basis for change in attitudes of

students throughout the nation toward cultural, racial, social, and socioeconomic issues (Brodinsky, 1979).

Educational Reform Proposed for the Eighties

One report which impacted education nationally was that of the Report to the President: United States National Commission on the International Year of the Child (1980). The authors portrayed a bleak public education stating that "there is at present a crisis of confidence in the public schools" and that "1.4 million Americans over the age of seventeen are totally illiterate and 15.5 million show serious difficulty" (p. 104). This commission reported that 800,000 handicapped children were not receiving required public school services.

In 1983, members of the National Science Board of the National Science Foundation (NSF, 1983) proposed reforms of the mathematics, sciences, and technologies curricula. As a recent result of Japanese advances in industrial technologies, these NSF members cited federal involvement of the 1960s as "an urgent program to produce vital talent . . . in wartime or the national response to Sputnik to renew its role in curriculum development" (p. 65). Also in 1983, in a universal call for reform, the National Commission on Excellence in Education in their report, A Nation At Risk: The

Imperative for Educational Reform, stated that "the citizen is dismayed at a steady 15 year decline in industrial productivity as one great American industry after another falls to world competition" (p. 18).

The National Commission on Excellence in Education (1983), in comparing student achievement, cited United States public schools as failing to measure up to schools of other nations. Several of the factors cited in their report were as follows:

1. Some 23 million American adults are functionally illiterate by the simplest tests of everyday reading, writing and comprehension.

2. About 13 percent of all 17-year-olds in the United States can be considered functionally illiterate. Functional illiteracy among minority youth may run as high as 40 percent.

3. Average achievement of high school students on most standardized tests is now lower than 26 years ago when Sputnik was launched (in 1957).

4. The College Board's Scholastic Aptitude Tests (SAT) demonstrate an unbroken decline from 1963 to 1980. Average verbal scores fell over 50 points and average mathematics scores dropped nearly 40 points.

5. There was a steady decline in science achievement scores of U.S. 17-year-olds as measured by national assessments of science in 1969, 1973, and again in 1977. (pp. 8, 9)

Members of the second International Science Study (1987), which tested 2,584 students in the 5th grade, 2,248 in the 9th grade, and 6,331 in the 12th grade of more than 300 U.S. public schools, found that despite a small gain in 1983, American students' performance in

1986 was at or below the level attained in 1970 when the first international study was conducted. Researchers for the second International Science Study (see Table 1) also found that U.S. students studying biology, chemistry, and physics for a second year performed at a lower level than students from other participating countries (International Science Study, 1987). First-year American students scored 25% fewer items correct in the area of biology and 37% fewer items correct in the area of physics than their counterparts from England.

Table 1

Performance in the Second International Science Study Percent of Items Correct

Country	Biology	Physics
England	59	71
Japan	58	48
US-1	34	34 (first year students)
US-2	44	44 (second year students)

Source. Modified from Rothman, 1987

Promotion and Achievement: Competency Testing

Researchers for The National Center for Educational Statistics in their report High School and Beyond: A National Longitudinal Study for the 1980's (1983) identified student activities, attitudes, and plans of sophomores and seniors:

1. Compared to 1972 data, 4% fewer students are taking an academic curriculum while 4% more students are choosing the vocational curriculum.

2. Thirty-four percent of all students took three or more years of mathematics; 23% of all students took three or more years of science.

3. Regionally, twice as many students in the Northeast took three or more years of mathematics, compared to the West. More than twice as many in the Northeast took three or more years of science as compared to the West.

4. Seniors in 1980 received better grades than seniors in 1972 while spending less time on homework. Twenty-five percent of the seniors spent five or more hours per week on homework compared to 36% in 1972.

5. Fewer than half of the 1982 seniors rated their schools as "good" or "excellent" in effectiveness and fairness of discipline.

6. Thirty-seven percent of schools in the Northeast and 20% of the schools in the West reported a requirement in minimum competency testing; only 15% of the schools in the South and 3% of the schools in the North Central had competency testing (pp. 7-38).

State public school boards are requiring accountability of student achievement via competency

testing (Labaree, 1984). By 1985, 25 state public school boards nationwide had enacted minimum competency testing with varying degrees of implementation. Some state school boards gave local school districts the option either to set their own standards or not use the competency test results for promotion or graduation. Among the first state school boards to implement competency testing in the late 1970s were Arizona, California, New York, and Oregon. School boards of the southern states delayed implementation until the middle 1980s, with North Carolina taking the lead in 1980 and South Carolina still yet to implement in 1990 (see Table 2).

Airasian (1987) showed that competency tests have had effects on minorities. This is reflected in Florida's black population in 1983 at 20% of the public high school seniors but with 57% of those who failed the State Student Assessment Test (SSAT) for that year (Airasian, 1987). Earlier researchers, Linn, Madaus, and Pedulla (1982), surveyed a random sample of Florida students equating to 10% of the white population of students in grades 9 through 12 for a total number of 8,284 as well as a similar 10% of the black population equal to 2,287 for grades 9 through 12. In identifying black students as having failed minimum competency tests

in higher proportion than white students, Linn et al. (1982) stated "at this point in our history, minimum competency testing requirements clearly have an adverse disproportionate impact on black students" (p. 17).

Table 2

States Which Enacted Minimum Competency Testing Requirements for High School Graduation: 1985

State	Required for High School Graduation	Government Level Setting Standard	First Graduating Class Assessed
Alabama	Yes	State	1985
Arizona	Yes	State/local	1976
California	Yes	State/local	1979
Colorado	Optional	Local	----
Delaware	Yes	State	1981
Florida	Yes	State/local	1983
Georgia	Yes	State	1985
Hawaii	Yes	State	1983
Kentucky	Yes	-----	----
Maryland	Yes	State	1982
Mississippi	Yes	State	1987
Nevada	Yes	State	1982
New Hampshire	Optional	State	----
New Jersey	Yes	State	1985
New York	Yes	State	1979
N. Carolina	Yes	State	1980
Oregon	Yes	Local	1978
S. Carolina	Yes	State	1990
Tennessee	Yes	State/local	1982
Texas	Yes	State	1987
Utah	Yes	Local	1988
Vermont	Yes	State	1981
Virginia	Yes	State/local	1981
Wisconsin	Optional	Local	----
Wyoming	Optional	Local	1981

Source. Modified from U.S. D.O.E., Office of Educational Research and Improvement, 1986

J. Goodlad (1983), in "A Study of Schooling: Some Findings and Hypotheses", after reviewing over 1,000 classrooms nationwide, reflected on the matter of competency testing:

> teachers are sensitive to the pressure that state and district testing programs place on them. They get the message . . . the other message that there are goals beyond those that the tests measure and that pursuing such goals calls for alternative teaching strategies are faint to begin with and are drowned out by the more immediate and stronger message. (p. 470)

Curricular Reform: More Academics

Since 1980, members of state boards of education in 46 states and the District of Columbia (of the U.S.) have changed their high school graduation requirements and established new minimum credits for a public high school diploma (Pipho, 1986). The result of this emphasis was a change in the number of credits required in regular academic courses, e.g., language arts, social studies, mathematics, and science. The lull in credit requirements by states' public school boards during the years 1958-1974 was indicative of the philosophy of educators during these child-centered years. State public school boards did not increase perceptibly the Carnegie units in language arts and social studies during the period 1958 through 1985; only an average of 0.4 and 0.5 units, respectively, were added to the high school graduation requirements. During this same period

of time, however, the states' public school boards mandated an increase of an average 1.1 Carnegie units in mathematics and 0.7 units in science. The increase in the mathematics and science units of credit from 1980 to 1985 also reflects the emphasis of societal needs towards a more technologically oriented populous. Few public school boards have abstained from state mandated requirements (see Table 3).

Table 3

Trends in State-Required Carnegie Units for High School Graduation for Language Arts, Social Studies, Mathematics, and Science: 1958 to 1986

	Language Arts		Social Studies	
Year	States Requiring Courses	Mean Units Required	States Requiring Courses	Mean Units Required
1958	37	3.4	44	1.9
1974	40	3.4	45	2.0
1980	39	3.4	42	2.0
1983	41	3.6	44	2.1
1984	45	3.8	49	2.4
1986	45	3.8	49	2.4
	Mathematics		Science	
Year	States Requiring Courses	Mean Units Required	States Requiring Courses	Mean Units Required
1958	31	1.1	31	1.2
1974	36	1.3	35	1.2
1980	35	1.2	35	1.2
1983	38	1.9	38	1.7
1984	44	2.1	44	1.9
1986	45	2.2	45	1.9

Source. Modified from Pipho, 1986

The impact of an increase in the public high school graduation requirements on student effort and teacher demand was examined by Natriello and Dornbusch (1984). They examined 38 classrooms to establish the type of demand placed on students by teachers. Natriello and Dornbusch found that the standards teachers had for students' performances were low and that special groups of students such as blacks and Hispanics were likely to experience extremely low demands from teachers. Their findings showed that the higher the demand, the more likely students were to report paying attention and spending time on homework even when ability level was controlled. The low ability students who were observed wanted their teacher to make them work harder; however, when placed in high demand classrooms, the low-ability students failed. Students who were not receiving challenging standards often perceived themselves as working hard on school tasks even though their own objective descriptions of their efforts showed them to be exerting minimal effort. These same students were likely to have poor grades and overall low academic achievement. The conclusion drawn by Natriello and Dornbusch was that low-ability students must be provided with additional help in attempting to meet the new, more demanding standards (1984). Other researchers noted

similar findings in the late 1960s and early 1970s. They determined that those teachers who expected more of students received more, thereby giving rise to the proposition that higher standards lead to greater effort and achievement under restricted conditions (Brophy & Good, 1970; Kester & Letchworth, 1972).

G. G. Wehlage (1983) observed that the best kind of academic course in the traditional high school program frequently presupposes the ability of the student to engage in abstract thinking. The approaches used in the courses proposed for reform depend more on the amount of abstract thinking which by their nature is not very effective for low ability, at-risk students (Wehlage, 1983).

Florida's R.A.I.S.E. and Educational Reform Acts

The Florida State Legislature, as a result of the growing demand for increased accountability in the public sector, implemented major reform in 1983 for its 67 public school districts. As identified in Laws Relating to Florida Public Education (1983), this reform action was mandated as a result of the 1983 Florida legislative action implementing Chapter 83-324, the R.A.I.S.E. Act (Raising Achievement in Secondary Education) and Chapter 83-327, the Education Reform Act. Through the R.A.I.S.E. and Education Reform Acts, the

Florida State Legislature revised and increased graduation requirements for public school students in grades 9 through 12. The provisions of the RAISE Act were separated into four parts:

1. Standards of Student Achievement. The general course requirements for high school graduation were changed, and the total necessary credits for a diploma were raised to 24 by school year 1986-87, with a minimum GPA of 1.5 on a 4.0 scale. This part also included requirements for each school board to adopt student performance standards for each academic credit program in public school grades 9 through 12 and incorporate these standards in their pupil progression plan by 1985. Additional provisions of Part 1 included the following: (a) changes in the Florida Academic Scholars Program, (b) a GPA of 1.5 for eligibility in interscholastic extracurricular student activities, (c) an age requirement of 18 for the high school equivalency diploma exam, and (d) changes in the categories of exceptional students and criteria for a certificate of completion.

2. School District Management. The Florida Legislature established inservice training institutes with provisions for them to determine annually the

subject areas of instruction, grade levels, and subject area specialities of instructional personnel.

3. Coordination of Vocational Education. Twenty-eight regions and coordinating councils were established with funding for programs tied to approval from the councils.

4. State Education Policy. The Florida Legislature established provisions for dual-enrollment funding to the districts for students that were enrolled in both public high school diploma credit courses and public college credit courses. In the Florida state education policy, rules and provisions were made for adjunct instructors, management information systems procedures, teacher certification, and specific definitions of job preparatory instruction, exploratory courses, supplemental programs, and practical arts courses (FL Ch 83-324, 1983).

The Florida Education Reform Act of 1983 was also separated into four parts:

1. Mathematics, Science, and Computer Education. Minimum student performance standards were added in the areas of science and computer literacy. Additionally, the State Board of Education approved standards of excellence in mathematics, science, and computer education, with regional centers set up to provide

knowledge, materials, teacher recruitment, and training. The teacher scholarship loan program, tuition reimbursement program, student loan forgiveness program, and the visiting scholars program were also provisions of this part of the Reform Act.

2. Extension of the School Day. The Florida State Legislature specified the number of hours of instruction for a school year as 1,050 for public school grades 9 through 12 with six instructional periods per day and provided for an additional period allowing for completion of seven credits per year.

3. Florida Merit Compensation Program. Through the Florida Merit Compensation Program (FMCP), the Florida Quality Instruction Incentives Council was created to review and approve district program proposals for merit teacher status. The Florida Meritorious Instructional Personnel Program was included in the FMCP to identify personnel and to fund awards for associate master teacher or master teacher.

4. Educational Reform Study Commission. The Florida State Legislature established the Educational Reform Study Commission to make a comprehensive study of reform issues as they related to the Florida public school system (Florida Ch 83-327, 1983).

Reform Measures and Student Achievement

Achievement incline or decline is an issue subject to attitudes and opinions. Former Secretary of Health, Education and Welfare, J. Califano, Jr. (1977), speaking before the College Board, said that "educational quality in America, despite the best efforts of parents, teachers and government officials, is going, not up, but down and sharply down" (p. 2). He further stated that "it is no wonder that public confidence in our educational system is more often waning than waxing" (p. 3).

The potential effects of increasing credit requirements for promotion and graduation reform were cited by McDill, Natriello, and Pallas (1985) in their report on raising standards and retaining students:

> If academic standards are raised and students are not provided substantial additional help to attain them, we predict that socially and academically disadvantaged students will be more likely to experience frustration and failure, resulting in notable increases in absenteeism, truancy, behavior problems, and dropping out. (p. 427)

These researchers had also stated that "students with limited ability along this one dimension may have to face repeated failure with little opportunity to engage in other activities that might afford them some success" (p. 425). In addition, McDill et al. (1985) observed that "the courses proposed for inclusion in the core

curriculum are typically academic courses, all of which tap ability along a narrow range" (p. 427).

In a meta-analysis study of effects of non-promotion on public elementary and junior high school students, C. Holmes and Kenneth Matthews (1984) examined a total of 11,132 students (4,208 non-promoted students and 6,924 regularly promoted students) in 31 investigations for effect size (ES). Three hundred-sixty-seven ES's were calculated with a mean effect size = - 0.44, indicating the promoted group of students had achieved a .44 standard deviation unit higher than the retained group of students. Holmes and Matthews (1984) found that the retention of elementary and junior high school students had the following negative effects: (a) Their achievement in the subsequent year is lower, (b) they make a less satisfactory emotional adjustment, (c) they have a diminished self-image, and (d) they have a less positive attitude toward school. Holmes and Matthews concluded that for the low-ability, at-risk youth retained in elementary and junior high school, a year of schooling may be lost and eventually the student may join the dropout ranks (1984).

Similarly, Archer and Dresden (1986) concluded from data of the first Texas Educational Assessment of

Minimum Skills exit level tests (TEAMS) that the students most affected by the exit level requirements will be made up of the disadvantaged (39% failed mathematics) and bilingual (48% failed language arts) low-ability students. Archer and Dresden found that of the total 191,556 eleventh grade students tested with the TEAMS, a disproportionate number of blacks and bilingual students of both sexes failed to master the mathematics and/or the language skills tests in October of 1985. Students failing to demonstrate mastery in the area of mathematics and language skills are required to retake and master that portion of the exam in order to graduate from a Texas accredited high school. Even though the percentage of failures appeared low, the number of students who did not receive a diploma because they had not mastered the tests was 22,485 in mathematics and 16,921 in language arts (Archer & Dresden, 1986). Archer and Dresden (1986) also identified 11,751 eligible eleventh grade students who did not take the TEAMS tests during its initial cycle and did not appear for the makeup cycle some months later for fear that they would fail. Present and future competency testing without the knowledge of the effects of non-promotion may create more problems for the educator and the at-risk student (see Table 4).

Table 4

Percent of Texas Eleventh Graders Not Mastering TEAMS

Demographic Category	% Math	% Language Arts
Male	12	11
Female	12	7
White	6	4
Hispanic	18	16
Black	28	19
Bilingual Programs	40	48
ESL Programs	34	47
Chapter 1 Programs	39	38
Gifted & Talented	0	1

Source. Modified from Archer & Dresden, 1986

Extracurricular Activities and Homework

Educators have raised the question of the relationship of achievement, socioeconomic background, athletics, and time spent on homework prior to reform measures of the 1980s and the 1983 R.A.I.S.E. Act of the state of Florida. In the early 1970s, Featherman, (1975) studied the relationship between achievement and socioeconomic background and correlated student intelligence and the father's background at 0.2, with the mother's education at 0.25, and the student's education at 0.54. He also presented a relationship of I.Q. on educational attainment correlated at 0.438 with the indirect effect of I.Q. due to socioeconomic factors at 0.102.

In observing the amount of time spent on homework as a contributing factor to a student's academic achievement, Coleman, Hoffer, and Kilgore (1982) examined both public and private school students at the high school level and determined that the amount of time spent on homework contributed significantly and positively to academic performance. Additionally, in a large sample path analysis, Keith (1982) examined high school grades and students' ability levels with regard to the amount of time spent on homework assignments and found that low ability students doing one to three hours of homework per week achieved grades commensurate with those of students of average ability who did no homework. In support of this finding, Paschal, Weinstein, and Walberg (1983) concluded from 15 empirical studies that homework had a positive effect on learning.

One researcher, Karweit (1984), in examining the research on student time and low-ability students, however, criticized the studies saying that they may show positive association between time and learning but that all of these studies have problems with inconsistencies and weak findings and are based primarily on samples of elementary pupils of average ability.

To determine the effect of extracurricular athletic activities on grades, Soltz (1986) examined the grades earned by 24,000 students in the Denver, Colorado, public schools for the school year 1982-83. His study included 1,500 interscholastic athletes and 4,553 students who did not participate in any interscholastic team. His findings were significant at the significance level of $p<.001$ with the average athlete's GPA = 2.67 versus 2.12 GPA for the non-athlete. He concluded that participation in interscholastic athletics does not depress student athletes' GPAs below the average of their non-participating peers. Soltz also reported that 23% of the total possible Fs were given during a semester of participation while 35% of possible Fs were given during the off season, showing a significance level at $p< .001$. A drawback that Soltz did point out in his findings, however, is that interpretation of the data does not lend itself to scrutiny of the types of courses the students took during the study, their motivation, time when the course was taken, nor the sympathy of the teacher toward the athlete or non-athlete (1986).

Other researchers have supported Soltz's findings by showing a direct effect of extracurricular involvement in lowering delinquency rates and increasing

persistence in school (Landers & Landers, 1978; Otto & Alwin, 1977; Spreitzer & Pugh, 1973). In 1985, the Texas Legislature passed a comprehensive educational bill known as House Bill 72. The major categories of reform included in House Bill 72 were related to school finance, special curricular programs, career ladder for teachers, student attendance, and student involvement in extracurricular activities (Texas Education Agency, 1985). Most notable of this Texas Bill 72 for public school students was the statute citation for extracurricular involvement of students in Texas Education Code, Section 21.920, 1985, part (b):

> A student enrolled in a school district in this state shall be suspended from participation in any extracurricular activity sponsored or sanctioned by the school district during the grade reporting period after a grade reporting period in which the student received a grade lower than the equivalent of 70 on a scale of 100 in any academic class. The campus principal may remove this suspension if the class is an identified honors or advanced class. (p. 249)

This researcher, in a 1986 telephone conversation with Dr. Dean Corrigan, Dean of Students, Texas A & M University, concerning support of athletics in the school, noted Dr. Corrigan's criticism of the no pass, no play, rule of the state of Texas' legislative House Bill 72. Dr. Corrigan believed you cannot make a person learn something by taking away the only incentive he has

for staying in school; the success gained motivates students to do more.

The Texas Education Agency, based upon a survey of selected districts and news reports, reported that the Texas' House Bill 72 was found to have been effective in the Dallas Independent School District in reducing the percentage of students failing courses. The percentage of all students in grades 7 through 12 who failed one or more classes fell from 55.6% in 1985, to 46.4% in 1986; in Houston, the percentage of students in grades 9 through 12 who failed at least one class declined from 53.4% in 1985, to 41.1% in 1986. Empirical data were not collected on the types of courses taken by the prospective athletes during the 1985-86 study. This led the agency to note that some of the students may be avoiding difficult classes such as Algebra 2, chemistry, and foreign languages in order to qualify to participate in extracurricular activities ("No Pass, No Play Found to Lift Grades in Texas", 1987).

Reform and the Low-Ability, At-Risk Student

Schools are socially chartered, and their reform is often related to changing social and political climates. The 1983 R.A.I.S.E. act in Florida and other reform measures throughout the nation since that time have made local public school districts aware of the problem of

whether or not the interests of society are being served or hampered by the knowledge imparted in the school. Society is naturally concerned with the economic impact of dropout rates across the nation as well as the disproportionate number of minority dropouts. The U.S. Department of Commerce has estimated that most dropouts can expect to earn at least $170,000.00 less than their diplomaed counterparts (U.S. Dept. of Commerce, 1979).

Based upon a longitudinal study of 30,000 high school sophomores attending 1,105 schools in the United States, the members of the National Center for Education Statistics (NCES, 1983) found significant variables of socioeconomic status and ethnicity as well as other factors relating to students' dropping out of school: (a) academic failure, (b) family problems, (c) economic opportunity or necessity, and (d) health related. Educators are reluctant to be responsible for three of the four they cannot influence, i.e., family problems, economic opportunity or necessity, and health related issues. The data gathered by NCES incorporated self-reports of school dropouts; researchers Gold and Mann (1984) realized the reports may have been less than reliable because students, in their opinion, tended to rationalize reasons for dropping out. However, in observing 100,000 students through their high school

careers for the classes of 1982, 1983, and 1984, a Chicago panel found the dropout rates for all students to be near 43%. Those students having the highest dropout rates were of Hispanic origin, with blacks at 45%, whites at 35%, and Asians at 20%. It was also discovered that over two-thirds of all dropouts had reading levels at least two years below grade level (Chicago Panel on Public Schools Finance, 1985).

In a similar study by the Intercultural Development Research Association of San Antonio, Texas (1986), one-third of the ninth-grade students in Texas in 1982 were found to have dropped out by the end of 1985-86 school year. Over 86,000 students, or 33% of the class studied, quit high school during the four year period of their high school career. Of the Hispanic dropouts, 50% completed fewer than nine years of schooling versus 18% of the white and black dropouts. Overall, 30% of those who dropped out between 1982 and 1986 had completed fewer than nine years of schooling.

In a study relating to the low ability black student, two anthropologists, Fordham and Ogbu (1987), observed and interviewed over a one-year period 33 students from a city high school in Washington, D.C. Their findings suggest that sociological factors beyond discrimination may be contributing to poor minority

achievement rates in school. Fordham and Ogbu maintain that blacks are accused of acting white if they follow white values and expectations. The low-ability blacks, therefore, submit to extended peer pressures and do poorly in school (Fordham & Ogbu, 1987). Contrarily, Sizemore, a professor in the department of Black Studies at the University of Pittsburgh, stated that she "doubted whether such peer pressure is a major factor in explaining poor achievement by Blacks nationwide. However, it might be significant where you've got a lot of gang activity" (Fordham & Ogbu, 1987, p. 14).

Economic Impact/Student Employment

In reference to the economic impact created by dropouts, two-fifths of the blacks, one-fourth of the Hispanics, and one-fifth of the whites ages 16-19 were unemployed (Wolk, 1987). Working while attending school has been documented to place pressures on students for more effective use of time and completion of homework assignments (Steinberg, Blinde, & Chan, 1984). Over 50% of all 17-year-old students were employed at least part time in 1979 (Michael & Tuma, 1983). In a 1984 study, Steinberg, Blinde, and Chan (1984), using data collected from 531 tenth and eleventh grade Orange County, California, students, found that first-time high school workers spent less time on homework than their

non-worker counterparts, skipped school more often, and received lower grades (Steinberg et al., 1984).

Other support was found by D'Amico (1984) in his research on student employment and economic progress. In a nationally representative sample of over 12,000 students aged 14-21 for the years 1979 through 1982, he determined that those students who worked and attended school were more prone to drop out of school if their job exceeded a moderate level of over 20 hours per week. D'Amico also found that time spent on the job resulted in less study time and less time for extracurricular activities and that a high work involvement had a direct effect on dropping out. He did, however, suggest that a moderate level of work involvement may have beneficial effects on students, but that high levels of work involvement disrupted classroom performance which caused the student to drop out of school. D'Amico summarized saying "early forays into the labor market may cause youth to lose their enthusiasm for schooling prematurely or allure them with the prospect of financial independence into abandoning any further educational investment" (p. 160).

Additionally, members of the National Center for Educational Statistics (NCES) in their report concerning the progression of students nationwide from the 1980

sophomore class stated that almost 14% of this class left after the Spring of their sophomore high school year without a diploma. Of these, males were more likely to drop out of high school than females. Factors of socioeconomic status, poor academic performance, and participation in non-academic programs were cited as the causes of their failure (NCES, 1984). These findings are supported by a 1986 report to congressional requestors which contained information that low socioeconomic status was a definite factor in dropping out. Students from households of low income and low skill wage earners with limited educational backgrounds were three times as likely to drop out of school as students from the highest end of the socioeconomic scale (U.S. General Accounting Office, 1986).

Extended Day and Student Achievement

Doubt about the positive impact on achievement of increased instructional time has been raised by Levin, Glass, and Meister (1984) in their analysis of the cost effectiveness of four interventions for improving reading and mathematics' scores. In evaluating cross-age tutoring, computer-assisted instruction, reduced class size, and increased instructional time, these researchers concluded that cross-age tutoring would be the highest in cost-effectiveness, and that

increased instructional time would yield the least benefit. Stedman and Smith (1983), in a further review of comparative data on academic achievement in 1983 across the nation, concluded that cultural factors were more important than time allotments in the classroom. With the increased amount of time in the classroom, low-ability students have less time to spend on extracurricular activities. McDill, Natriello, and Pallas (1985) see this increase in time requirements in the classroom as having dire consequences for these students and stated "cutbacks in extracurricular activities due to increased school time may deprive the school of the only holding power it has for those high-risk students" (p. 426).

Summary

The focus of this review was on the effects of increased academic requirements for high school graduation on the public school student. A historical perspective of the educational reform movement for the past 30 years was presented as a foundation for the changes in the educational system nationally and more specifically of Florida. The majority of the United States have changed and/or increased their minimum requirements for a high school diploma since 1983 with varying results on achievement of students. Most

notably, however, are the effects of the reform movement on the minority populations of blacks and bilingual students. Support for increased expectations of students was found in earlier research of the late 1960s and early 1970s but more recent studies by researchers showed that this type of demand favored predominately the high-ability student and lost the low-ability student.

Common expressions of a lack of accountability gave rise to a renewed cyclical emphasis on promotion standards with 50% of the United States resorting to some form of competency based test for academic promotion between the grades or schools, i.e., elementary school to junior high school to senior high school. The researchers noted in this literature review indicated that for those students labeled low-ability, the possibility of not being promoted is much greater especially for blacks and bilingual students. Negative findings regarding retention of low-ability students have been supported in the literature such as subsequent year lower achievement, diminished self-image, poor school attitude, and a less than satisfactory emotional adjustment. Mixed results were discussed with reference to the amount of time spent on homework as a contributing factor to academic achievement. The

researchers identified in the literature supported participation in extracurricular activities as having a positive effect on student achievement during times of participation. Students who worked after school hours for a moderate period of time were observed as not having difficulty in their coursework. However, when increased work load after hours approached 20 hours or more, negative effects on achievement were observed. Throughout the review of literature, reform efforts on the overall student population appear to have positive effects on the average and high-ability student but mixed effects on the low-ability student.

Chapter 3 of this study will focus on the research design and methodology employed for the public school sample population of Brevard County, Florida. A brief demographic review of Brevard is presented to provide a perspective of the setting for the sample taken.

CHAPTER 3
RESEARCH METHODOLOGY

Introduction

The R.A.I.S.E. Act of 1983 presented educators with the task of maintaining and increasing student proficiency without jeopardizing the low-ability student's graduation. The full effects of this bill are yet to be realized across the state of Florida with reference to its impact on student achievement. A demographic review of Brevard County was incorporated into this chapter to give the reader a perspective of the area population studied. This chapter contains the methodological procedures used in the investigation as well as a restatement of the purpose of the study, questions, description of the subjects, data procedures, and data analyses. The opinion survey used for this study was adapted from MGT, Inc., a professional research organization employed in 1986 by the Florida Department of Education to evaluate characteristics of its R.A.I.S.E. and Reform legislation.

Purpose of the Study

The purpose of this study was to determine how a select group of educators and students of the Brevard

County, Florida, public school system appraised the implementation of the requirements of the Florida R.A.I.S.E. and Education Reform Acts of 1983. Six questions were addressed:

1. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased minimum grade point average (GPA) needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

2. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

3. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?

4. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in

extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

5. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

6. Have achievement levels among secondary students, as measured by the Comprehensive Test of Basic Skills (CTBS), in grades 9 through 11 of the Brevard County Public Schools, changed significantly ($p < .05$) subsequent to implementation of the R.A.I.S.E. and Education Reform Acts of Florida?

Demographic Review of Brevard County Geography

Brevard County is situated near the middle of the state of Florida along the Atlantic Ocean; it has a width of approximately 20 miles east to west and a length of 72 miles north to south. The western boundary is formed by the St. Johns River and Osceola County with Orange, Seminole, and Volusia Counties providing the north and northwest borders respectively, and Indian River County as the southern border. The eastern border is the Atlantic Ocean. The county seat, Titusville, is 40 miles east of Orlando, 40 miles southeast of Sanford,

and 142 miles south of Jacksonville, Florida. Brevard County has an area of 1,310 square miles along the Atlantic Ocean with three distinct landmarks: the St. Johns River Valley, the Atlantic Coastal Ridge, and the barrier islands (Brevard County Data Abstract, 1987, p. 1).

Population

Brevard County is the ninth largest county in population in the state of Florida. With 85% of the population urban or suburban, Brevard County continues to grow as a result of the Kennedy Space Center, electronic and other high technology industries moving into the area. Current population data adapted from the Cocoa Beach Area Committee of 100: "Community Data" (1987), placed 357,033 persons in Brevard, a 31% increase since the 1980 census data. Population is estimated to have increased by over 18,000 persons between 1985 and 1986. The five year period between 1980 and 1985 witnessed over twice the amount of population growth that occurred during the previous ten year period between 1970 and 1980. Between April 1970 and April 1980, Brevard grew by 18.7% (see Table 5).

As identified in data presented in the "Census Tract Data for 1980" by the Cartography Division of Brevard County in 1987, growth within age groups for

this 10 year span was uneven: (a) The population aged 5 to 14 declined 32%, (b) the high school population increased 26.4%, (c) the first household formation group for ages 20 to 24 increased 59.2%, and (d) the senior population age 60 and over increased 168.5% (Brevard County Data Abstract, 1987, p. 8). The population of Brevard County has aged; i.e., the age composition is shifting toward a greater proportion of older persons and a shrinking proportion of school age children.

Table 5

1970-80 Population Changes by Area

Area	1970 Pop.	1980 Pop.	%Change	Median Age
North Mainland	41,965	43,653	4.0	35.8
Central Mainland	42,207	47,550	12.6	31.3
South Mainland	61,212	87,226	42.5	36.0
North Beaches	16,403	18,617	13.5	42.4
South Beaches	33,503	40,483	20.8	39.7
Total	195,290	237,529	18.7	

Source. Cocoa Beach Area Committee of 100, 1987)

The rapid population expansion of the past three decades was linked initially to the growth of the space industry in Brevard County, centered at Cape Canaveral

and the Kennedy Space Center; more recently, however, growth in the County is enhanced by the influx of the electronics industry, NASA Space Shuttle operations, and retirees.

Labor/Construction

Researchers for the "Census Tract Data for 1980" of the Brevard County Cartography Division (1987), showed the civilian labor force at 164,817, with employment at 156,687, equaling a 4.9% unemployment rate of 9,512 persons (p. 35). From 1982 to 1985, residential construction in Brevard county grew from 4,000 permits in 1982 to 10,810 in 1985. Since the Challenger space shuttle explosion in January, 1986, residential construction declined to 7,802 permits at year's end but rose by 25% by the end of 1987 (Brevard County Data Abstract, 1987, pp. 21-26). More than 16,000 workers were employed at Kennedy Space Center at the time of the Challenger explosion with the number of workers being reduced to 13,500 at the close of 1986 (Brevard County Data Abstract, 1987, pp. 31-32). However, by December, 1987, the space center workforce was increased to 15,130. Clearly, the economy in Brevard County was affected by the Challenger disaster; but, as evidenced in rising employment rates and construction for the area, the Space Coast economy rebounded with key

industry employment being found in aerospace, electronics, government, and citrus. Bill Schulte, assistant to the director of the Brevard Economic Development Council, stated concerning Brevard County's future: "We have the highest percentage of manufacturing employees of any county in the state of Florida, some 20%. The Florida average is about 11%" (White, G., "Forcast", 1987, p. 2H).

Education

The instructional programs of Brevard County public secondary schools for the past 20 years have been based on a plan of a multi-phase structure which allows individualization of instruction (Brevard County School Board, 1988). A student was placed in a particular phase based upon achievement test scores of the Comprehensive Test of Basic Skills (CTBS), as well as counselor and teacher recommendations. The instructional approaches and learning activities as identified in Brevard County's Senior High School Instructional Program Booklet (1988) were as follows:

1. Phase I. Content is designed for students who need special assistance in small classes.

2. Phase II. Content is designed for students who need more emphasis on the basic skills.

3. Phase III. Content is designed for students who have a background of average achievement.

4. Phase IV. Content is designed for students who have backgrounds of excellent growth and achievement.

5. Phase V. Content is designed for that small group of self-motivated, creative, advanced students who look forward to pursuing college preparatory topics while still in secondary school.

6. Phase Q. The Quest phase of the curriculum is provided for students who exhibit creative talents; they may research an area in which they are deeply curious.

7. Phase X. These are courses which do not accommodate student mobility or are designed to maximize learning opportunities by mixing ability levels (Brevard County School Board, 1988, p. 4).

Assignment of a student to any one phase was flexible for each course selected in the curriculum. A student may have been rescheduled into another phase upon demonstration of a sustained increase in academic achievement and parent approval.

Prior to Florida's R.A.I.S.E. and Reform Acts of 1983, Brevard County's public secondary schools offered a curriculum of courses meeting for 55 minutes per period based upon grades 10-12 requiring 18 credits for graduation. The credit requirements were such that

English was the only area of the curriculum that was required of students all three years with the exception of those students in a Job Entry program. After implementation of the R.A.I.S.E. and Educational Reform Acts, Brevard County School Board adopted new graduation requirements in the Fall of 1983, changing from a 10-12 secondary school grade sequence to a 9-12 sequence. Affecting the curriculum directly, the Brevard County School Board took the state's (Florida) option of reducing the time for a course to meet from 55 to 50 minutes per period, incorporated the optional seven period day, eliminated the Job Entry program, and increased the credit and graduation requirements for public secondary school students. The Brevard County School Board adopted an additional science credit requirement for students in the 1983-84 school year and grandfathered all Job Entry students for that same year (see tables 6 & 7).

Additionally, in 1984, the Brevard County School Board adopted the new graduation requirements as required by Florida's R.A.I.S.E. and Educational Reform Acts. The social studies credit increase included a one semester course in American government, and a one semester course in economics (see Table 7).

Table 6

Requirements for Graduation Prior to and after R.A.I.S.E.

Subject Area	Students Entering Grade 10 Prior to 1983-84 Grades 10-12	Students Entering Grade 10 During Or After 1983-84 Grades 10-12
English	3(*)	3(*)
Mathematics	2	2
Sciences	1	2
Social Studies	2	2
Physical Education	1	1
Electives	9	8
Total Credits Required	18	18

Note. * Job Entry students were only required to have two English credits. (Brevard County, 1983-84)

Table 7

Requirements for Graduation in Brevard County, 1984-85

1983-84 Sophomores & Juniors, Grades 9-12		Students Entering Grade 9 in or after 1983-84	
English	4		4
Mathematics	3		3
Science	3		3
Social Studies	2		3
P.E.	1		1/2
Electives	9	Life Management	1/2
		Performing Arts	1/2
		Personal Fitness	1/2
		Practical Arts	1/2
		Electives	8 1/2
Total Credits	22		24

Source. Brevard County School Board, "Senior High Instructional Program", 1984, p. 12

Public high school seniors in the state of Florida were awarded 83,692 diplomas for school year 1986-87 (MIS Statistical Brief, 1988, p. 1). Public schools in

Brevard County, a single district school system, graduated over 3,000 high school students in 1987 from a total student population of 48,074 (MIS Statistical Brief, 1988, p. 4). Scholastic Achievement Test (SAT) scores in the area of mathematics for students tested in Brevard County during the 1985-86 school year were 28 points above the state (Florida) average and 22 points higher than the national average. Verbal SAT scores were also above by nine and four points respectively for Brevard compared to the state and nation (see Table 8).

Table 8

Brevard County Scholastic Achievement Test (SAT) Scores 1985-86

Brevard County		Florida	USA
MATH	497	469	475
VERBAL	435	426	431

Source. Guidebook to Brevard County Public Schools, Brevard County, Florida, 1987, p. 32

Higher education in Brevard County was supported by several public and private institutions: (a) Brevard Community College, (b) Florida Institute of Technology, (c) Rollins College, and (d) the University of Central Florida. The last census in 1980 listed Brevard County with a high level of literate populous based upon the total population and racial composition of each area. The beach areas, inclusive of Patrick Air Force Base,

had the highest percent of high school graduates (mean = 89%) with 22.6% of the total population of Brevard. The largest single area of growth cited in 1980 was the South Mainland with 31.9% of the total population in Brevard with 70.8% high school graduates (see Table 9).

Table 9

1980 Census of Brevard County, Florida
Racial Composition and High School Graduates

Area	Population	White	Black	Spanish Origin	% H.S. Graduate
North Mainland	43,632	38,448	4,755	745	71.4 %
Central Mainland	47,550	37,339	9,668	779	69.9 %
South Mainland	87,226	79,644	6,302	1,771	70.8 %
Merritt Island	32,514	30,289	1,724	695	78.1 %
North Beaches	18,690	18,095	265	373	86.4 %
South Beaches	40,483	39,181	681	842	90.2 %

Source. Census Tract Data for 1980, Brevard County Cartography Division, 1987, pp. 16-17

General population statistics from the latest census of 1980 (see Table 10) were such that the largest number of K-12 school age children were residing in the Titusville area (North) at 44%, with the Cocoa/Rockledge

(Central) and Palm Bay (South) areas comprising 61% of the total.

Table 10

1980 Brevard County General Population Characteristics

Area	Ages 5-18	Persons/Households
Cape Canaveral	619	1.92
Cocoa	3380	2.61
Cocoa Beach	1529	2.32
Palm Bay	3359	2.65
Rockledge	2565	2.82
Titusville	6605	2.71
Total	18057	

Source. Census Tract Data for 1980, Brevard County Cartography Division, 1987, p. 1

Identification of Population and Sample

The Brevard County public school district was the 66th largest among the nation's more than 16,000 school systems in 1987 (Guidebood to Brevard County Public Schools, 1987). Within Brevard County, there were 69 public schools with a total of 50,821 students enrolled in grades K-12 for the 1988-89 school year (Brevard County Schools Membership Report, 1988).

The target population for questions 1 through 5 consisted of male and female high school students, administrators, counselors, and teachers in a Florida public high school setting for grades 9 through 12. The sample of public school students surveyed included a proportionate random sample of the total membership of

those students who were enrolled in grades 9 through 12 that attended any one of the five, 4-year high schools in the Brevard public school district such that the total sample approached 250 students. Administrator, counselor, and teacher sample populations surveyed were also from any one of the five, 4-year high schools in the Brevard public school district. Administrator and counselor samples included all of the principals, assistant principals, and counselors within the five, 4-year high schools. Teacher samples surveyed were from all department chairpersons within the five, 4-year high schools.

The target population for question 6 consisted of male and female high school students who were enrolled in a 4-year public high school. The sample of students included those who were enrolled in grades nine through eleven in the Brevard County public school system and housed in a senior high school setting for school years 1980 through 1983 and 1983 through 1986, respectively. The targeted schools for the Brevard public school district included six high schools which housed grades 9 through 12 located in the north, central and south portions of the district (North = Astronaut High School and Titusville High School; Central = Cocoa High School, Cocoa Beach High School, and Rockledge High School;

South = Palm Bay High School). Two groups of 350 ninth grade students were proportionately selected at random from the total membership of the six public high schools for school years 1980-81 and 1983-84, respectively (see Tables 11 & 12). The number of students selected for each group was such that adding more would not have significantly reduced the standard of error of measures used in this study. A microcomputer software package titled "Statpac Gold" by Walonick Associates, Inc. (1986) was used to determine the random numbers for the selection of the samples for this study. Incorporation of the replace method after each number was selected.

Table 11

Brevard County Schools Membership: March 1980-81

SCHOOL	GRADE 9TH	% OF TOTAL	% x 350	AREA
Group A				
ASTRONAUT H.S.	350	16%	56	NORTH
TITUSVILLE H.S.	400	18%	64	NORTH
COCOA H.S.	462	21%	73	CENTRAL
ROCKLEDGE H.S.	312	14%	50	CENTRAL
COCOA BEACH H.S.	213	10%	34	CENTRAL
PALM BAY H.S.	461	21%	73	SOUTH
TOTAL =	2198	100.00%	350	

Source. Brevard County Schools Membership Report, 1980

Table 12

Brevard County Schools Membership: March 1983-84

SCHOOL	GRADE 9TH	% OF TOTAL	% x 350	AREA
Group B				
ASTRONAUT H.S.	362	17%	59	NORTH
TITUSVILLE H.S.	438	20%	71	NORTH
COCOA H.S.	378	17%	60	CENTRAL
ROCKLEDGE H.S.	274	13%	45	CENTRAL
COCOA BEACH H.S.	213	10%	35	CENTRAL
PALM BAY H.S.	486	23%	80	SOUTH
TOTAL =	2151	100.00%	350	

Source. Brevard County Schools Membership Report, 1983

Instrumentation Design for Research Questions 1-5

The opinion survey used in this study was originally developed in 1986 as a joint effort on the part of Florida's Department of Education and MGT of America, Inc., a research group designated to evaluate the R.A.I.S.E. and Education Reform Acts of Florida on a state-wide basis. The survey was adapted for this study to reflect only those questions pertaining to the following five areas: (a) extracurricular activities, (b) minimum GPA for graduation, (c) increased credits for graduation, (d) extended school day, and (e) increased academic requirements. A 20 statement opinion survey with Likert-type format provided respondent

groups of educators and students with five types of answers, e.g., strongly agree, agree, disagree, strongly disagree, and I don't know.

Instrumentation Design for Research Question 6

The Comprehensive Tests of Basic Skills (CTB/McGraw-Hill, 1977, 1988) are norm-referenced measures of basic skills designed for and standardized on a wide variety of students. The basic skills are classified in six major areas (reading, language, mathematics, reference skills, science, and social studies), each of which is classified into two or three levels. These tests were administered to students in grades 1, 2, 4, 6, 7, 9, 10, and 11 in the Brevard public school district during the school years 1980-88.

During the years of testing to be observed for this study, the total battery score (comprised of reading, language, and mathematics) of Form S, Level 4, of the CTBS was utilized for grades 9 through 11 during the 1980 through 1984 school years. For school years 1984-88, the CTBS Form U, Level J, was given to the ninth grade, Form V, Level J, to the tenth grade, and Form U, Level K, to the eleventh grade.

Norming

The basic norm group for the CTBS-S, was a national sample of 212,000 students in grades 2 through 10 with

schools randomly selected from districts chosen by stratifying all US school districts by size, socioeconomic level, and geographic region. Findley, in his review of the expanded edition of the CTBS-S, cited in The Eighth Mental Measurements Yearbook (Buros, 1978), identified a slight over representation of minority ethnic groups in the norming procedures. He did, however, commend the publishers for developing an expanded standard scale score over the total range of the battery. The CTBS-U/V norming sample contained approximately 250,000 students in grades K-12 from public, Catholic, and other private schools.

Thurstone scaling, which was applied to CTBS-S, was based upon the obtained distributions of two or more samples on the same test and finding a common scale so that all of the distributions were normally distributed. Linking any two levels was done by setting the scale mean and standard deviation of the lower level at an overlapping grade equal to the mean and standard deviation of the upper level at the same grade. The equating of levels was equivalent to an equipercentile equating of levels.

In contrast, the CTBS-U/V forms applied the "item response theory" or IRT for purposes of item analysis, bias studies, scaling, equating, and estimation of

standard errors of measurement (Buros, 1985, p. 382). Robert Linn, writing for The Ninth Mental Measurements Yearbook (Buros, 1985, p. 383), saw a high correlation between number-correct and item pattern scores.

Validity

J. Stanley Ahmann in The Seventh Mental Measurements Yearbook (Brown, 1970), stated that "the validity and reliability determinations follow closely the 1966 APA recommendations for psychological tests" (p. 21). He cites that Bloom's taxonomy for the cognitive domain provided a basis for the classification of the objectives, each of which was stated in terms of student behavioral patterns. However, it is noted that for the CTBS-S, the most obvious weakness was the lack of validity data. In Robert Linn's review of the CTBS-U/V, he also states that evidence is rather scanty in support of the validity of the tests:

> the statistical data related to validity consisted of a list of the number of items and the percentage of students in the norming sample who demonstrated mastery of each objective at a given grade level. Bayesian estimates of proportion correct within a category are used with a .75 mastery criterion for each objective. (Buros, 1985, p. 383)

Linn goes on to say that "evidence for the CTBS validity is comparable to that provided by publishers of several similar batteries, and content validity is understandably considered primary, and content

validation is generally viewed as a matter of judgement" (Buros, 1985, p. 384).

Reliability

J. Stanley Ahmann found for the CTBS-S that there was a high degree of reliability that existed for subtest scores as well as for total scores. He stated that the "K-R 20 reliability coefficients were usually in the 0.85 to 0.95 region, although a few drifted downward as low as 0.75" (Brown, 1970, p. 23). Robert Linn, in his review of the CTBS-U/V, did not find the K-R 20 coefficients available (Buros, 1985) but the technical bulletin from CTB-McGraw Hill, 1982 (Technical Bulletin, 1982, p. 219, table 109) lists the K-R 20 coefficients for the total battery at 0.98, with the lowest in the area of spelling and reference skills at 0.81. Linn also pointed out the detailed reporting of standard errors of measurement by level of scaled score as revealing the range of scores where the results are most dependable. No estimates of score stability were provided for Linn's review as was also noted in Anthony Nitko's review of the CTBS-S (Buros, 1978, p. 44).

Comparable Test Forms

An equitable table (see Table 13) for comparing the CTBS forms S and U/V were required since the testing cycles included in this study were such that there was a

change in usage of form S to U/V after the 1983-4 school year. The CTBS Technical Bulletin of 1984 reports:

> In order to correlate and equate scores on CTBS/S and CTBS/U-V, both tests were administered in the fall of 1981 to students in 44 geographically dispersed school districts across 21 states of the United States. This sample was obtained from CTB/McGraw-Hill customers who were asked to administer the tests in two classrooms per grade per school in Grades K through 12. Approximately half the sample took Form U first and retested a week later with a corresponding level of Form S; the other half took Form S (Order 1) first and were tested a week later with Form U (Order 2).
>
> The orders of administration were aggregated, and Pearson product-moment correlation coefficients were computed in scale score units on matched cases for various combinations of test levels and grades. The resulting intercorrelations are summarized in table 13 which shows a high correlation range of .87 to .91 for both tests forms throughout grades 9 through 12. (CTB/McGraw-Hill, 1984, p. 51)

Table 13

Pearson Product-Moment Correlation Coefficients
Total Battery: Level 4, CTBS/S - Level J, CTBS/U

Grade Level	N	Coefficient
9th	1181	0.90
10th	656	0.89
11th	587	0.87
12th	610	0.91

The CTBS Technical Bulletin further states:

> The equipercentile method was used to equate Form S and Form U. The equating process was based on distributions of scale scores for matched cases, with grades combined where feasible. The normed sections that were equated are Total Reading, Total Language, Total Mathematics, and Total Battery. The number of matched cases for the Total Battery

of grades 9-12 Form S/Level 4 and Form U/Level J was 3,428. (CTB/McGraw-Hill, 1984, p. 51)

Research Procedures for Questions 1-5

An opinion survey (see Appendix A) adapted from the MGT instrument was pilot tested in the Brevard County public high school system with five students from each grade level (9-12) of one high school, as well as five educators at the secondary level. A field test of the opinion survey was performed in the neighboring Orange County, Florida public school system at two high schools (see appendix B) which housed grades 9-12. A random sample of student membership at each field test school's grade level (n=25/grade) was given the survey as well as all of the principals, assistant principals, counselors, and department chairpersons of the two high schools. A separate analysis was included in appendix B of this study to provide for population validity, and internal validity of the instrument.

Once field tested, the Likert-type opinion survey of 20 statements was given to Brevard County, Florida public high school administrators, guidance counselors, and department chairpersons of those schools with grades 9-12. A proportionate stratified random sample of the total membership of students was surveyed (n=250) based upon the October, 1988 Full Time Equivalent (FTE) membership of each grade level (9-12) of the five area

public high schools. These surveys, with a cover letter and directions for completion, were mailed to each principal of the targeted schools (see appendices C and D). Surveys were returned through the Brevard County public school courier service.

Research Procedures for Question 6

The Comprehensive Tests of Basic Skills was given to all students in the Brevard County public school system in grades 9, 10, and 11 during the 3rd week of the second semester of each year. The total battery score for each student in the sample was recorded for each of their years in grades 9, 10, and 11 for group A (1980-83, see Table 11) and group B (1983-86, see Table 12). Ex post facto records of CTBS scores were taken from archives of those student records selected by the random generator.

Normal curve equivalents were taken from the total battery scores of those students for grades 9 through 11 during the school years 1983-86, whereas the scale score of the total battery for the CTBS for grades 9 through 11 during the school years 1980-83 was converted to a normal curve equivalent for comparison purposes.

Data Analysis for Research Questions 1-5

The Likert-type survey items for the respondent groups were compiled and formatted into a tabular manner

of mean and standard deviation for each of the groups. The survey items were separated into five categories based upon content identified in the terminology with the following numeration configuration: (a) minimum grade point average (GPA) = items 12, 13, 14, and 18; (b) number of credits = items 4, 5, 11, and 17; (c) number of class periods/day = items 3, 8, 10, and 16; (d) extracurricular involvement = items 7, 15, 19, and 20; graduation requirements = items 1, 2, 6, and 9.

Although the survey data were ordinal in nature, they were combined into subtotal scores and used as interval scales. Ferguson (1976) indicates that in the fields of psychology and education, "the researcher often assumes information which he actually does not have. Variables which in fact are ordinal may be treated by a method appropriate for interval and ratio variables" (p. 15).

Each of the responses was assigned a value of one to five based upon a range from the Likert scale such that the response of "strongly agree" equaled a value of one, to "strongly disagree" with a value of five. Survey statements that were of a negative nature (e.g. number 3, 5, 7, 8, 10, 11, 12, 16, 18, and 20) were given opposite value range of responses such that the "strongly agree" equaled a value of five, to "strongly

disagree" with a value of one. Scores of each respondent for the statements were of a summative nature such that for each opinion area, a person's score would have a range from 4 to 20. A mean score for each sampled group (e.g., administrators, counselors, teachers, and students) with respect to the opinion areas (e.g., minimum GPA, number of credits, number of periods, extracurricular involvement, and graduation requirements) was used in a one-way analysis of variance (ANOVA) to separate the data for each grade level of student group with respect to administrators, counselors, and teachers. In order to test for the assumption of equal variances for those calculated F values found to be significant at $p < .05$, the conventional Bartlett's chi-square test on the within-cell variances was utilized; follow-up analysis was performed by a LSD (least significant difference) procedure using *t*-tests between all the combinations of means where the F-ratios were found significant at less than or equal to the .05 level.

The original study of Florida's R.A.I.S.E. and Reform legislation was presented in MGT's report Evaluation of Selected Components of The R.A.I.S.E. and REFORM Legislation (MGT, 1987); a modified Likert survey of 20 statements was developed by this researcher to

present to educators and students in one public secondary school district of Florida. A field test of this survey was performed in two public high schools in Orange County, Florida; resutls of the field test are identified in Appendix B of this study.

Data Analysis for Research Question 6

The initial identical size of the sample (N=350/group) for the CTBS scores used for each group justifies an assumption of homogeneity of variance and normality of distribution within the sample. In order to identify any relationship of the R.A.I.S.E. and Reform Acts on student achievement, this study used a two-way ANOVA comparing total battery CTBS scores for each group of grade level students across three consecutive grade levels and from 1980-83 (pre-R.A.I.S.E.) and 1983-86 (post-R.A.I.S.E.) respectively. Follow-up analysis was performed by a LSD (least significant difference) procedure using *t*-tests between all the combinations of means where the F-ratios were found significant at less than or equal to the .05 level. The statistical analysis software package "Statpac Gold" (Walonick Associates Inc., 1986) was utilized to perform necessary procedures for analyses.

CTBS total battery data for each group were recorded in integer form with the CTBS represented by

the normal curve equivalent for each sample. The interaction between cells of differing grade levels for each group was examined as it pertains to the sample means for total battery CTBS; main effect across grade level was also examined for both groups, pre-R.A.I.S.E. and post-R.A.I.S.E.

Summary

A proportionate random sample of five Brevard County public high schools' students in grades 9-12 was given a 20 statement opinion survey of Florida's R.A.I.S.E. and Reform Acts of 1983. This same survey was given to educators of the five sampled high schools. Data were analyzed by a one-way ANOVA comparing each grade level of students to educators. Bartlett's chi-square test on the within-cell variances was performed to test for the assumption of equal variances (homogeneity); follow-up analysis was performed by a t-test between all the combinations of means where the F-ratios were found significant at less than or equal to the .05 level. Additionally, achievement data from each group of grade level students across three consecutive grade levels (9-11), i.e. CTBS from 1980-83 and 1983-86 respectively, were analyzed by a two-way ANOVA. Follow up analyses was performed by a t-test where F-ratios were found significant at $p < .05$. The statistical

analysis software package "Statpac Gold" (Walonick Associates Inc., 1986) was utilized to perform necessary procedures for analyses.

A presentation of the data obtained from the responses to the attitude survey for research questions 1-5 is included in Chapter 4; findings of the analyses for the two groups of students categorized as pre-R.A.I.S.E. and post-R.A.I.S.E. for research question six are also presented in Chapter 4.

CHAPTER 4
DATA ANALYSES AND RESULTS

Introduction

The purpose of this study was to determine if there was a significant difference of opinion among administrators, counselors, students, and teachers in the public secondary schools of Brevard County, Florida, regarding Florida's R.A.I.S.E. and Education Reform Acts. Relative achievement of Brevard County public school students in grades 9 through 12 prior to and subsequent to Florida's RAISE and Educational Reform Acts of 1983 was also examined for significant change via total battery score of the students' Comprehensive Test of Basic Skills (CTBS). This chapter presents analyses and results of the data which were collected to answer six research questions and is organized by the following subtopics: (a) descriptive analysis of the random samples, (b) tests and results of significance for research questions, and (c) summary of Chapter 4.

Descriptive Analyses of the Samples

A proportionate random sample of students from the Brevard County public school system in grades 9 through 12 was identified for participation in the opinion

survey (see Appendix A). A summary of participants is reflected in Table 14 and identified by school, grade level, and sample size with associated number and percent. The Northern region of the Brevard public school district was represented by two high schools, Astronaut and Titusville, which provided 125 students or 50% of the total sample. The Central region of this district was represented by three high schools, Cocoa, Cocoa Beach and Rockledge, which provided 125 students or 50% of the total sample. At the time of this study, the Brevard County school district did not have a secondary school in the Southern region that housed grades 9 through 12 for school year 1988-89.

Table 14

Proportionate Random Sample of Students by Grade Level

HIGH SCHOOL	9th	10th	11th	12th
Astronaut	370 (24)	321 (23)	308 (23)	299 (24)
Sample	17	15	14	13
Titusville	406 (26)	399 (29)	342 (25)	331 (26)
Sample	18	18	15	15
Cocoa	361 (23)	314 (23)	323 (24)	255 (20)
Sample	16	14	14	12
Cocoa Beach	149 (09)	157 (11)	137 (10)	151 (12)
Sample	7	7	6	7
Rockledge	278 (18)	202 (14)	238 (18)	227 (18)
Sample	12	9	11	10

Note. The numbers in parentheses indicate a percentage of grade level membership.

Survey Categories for the Opinion Survey

The categories of respondents (e.g., grade level, administrators, counselors, teachers) involved in the opinion survey for this study are summarized in Table 15. Data include the selected public schools and geographical region for the Brevard district, the number of the sample sent to each participating public school, as well as the number and percentage of responses.

Two-hundred fifty opinion surveys were sent to public school students in grades 9-12 of the sites selected within the North and Central regions of the Brevard school district. A total of 230 student opinion surveys were returned for an overall 92% response. Thirteen opinion surveys were sent to the high school administrators, and 11 surveys were returned for an 85% response. Eighteen opinion surveys were sent to the high school counselors, and 18 were returned for a 100% response. Twenty-one surveys were sent to the high school department chairpersons, and 21 were returned for a 100% response. A second attempt at acquiring additional returns from the student sample was not initiated due to the relatively high percentage of responses attributed to the cooperative agreement of the participating schools and the use of inter-school courier service.

Table 15

Number of Random Sample Versus Response to Survey

HIGH SCHOOL	9th	10th	11th	12th	ADM	COUN	TEACH
Astronaut (North)							
Sample	17	15	14	13	3	4	4
Response	15	15	14	13	2	4	4
% Response	88	100	100	100	100	100	100
Titusville (North)							
Sample	18	18	15	15	3	4	5
Response	14	16	13	14	2	4	5
% Response	78	89	87	93	67	100	100
Cocoa (Central)							
Sample	16	14	14	12	2	4	4
Response	14	12	12	11	2	4	4
% Response	88	86	86	92	100	100	100
Cocoa Beach (Central)							
Sample	7	7	6	7	2	2	4
Response	7	7	6	7	2	2	4
% Response	100	100	100	100	100	100	100
Rockledge (Central)							
Sample	12	9	11	10	3	4	4
Response	11	7	10	10	3	4	4
% Response	92	78	91	100	100	100	100
Total Membership	9th	10th	11th	12th	ADM	COUN	TEACH
Sample	70	63	60	57	13	18	21
Response	61	59	55	55	11	18	21
% Response	87	94	90	97	85	100	100

Note. ADM=Principals; COUN=Counselors; TEACH=Teachers

Survey Categories for CTBS, Pre/Post R.A.I.S.E.

Relative achievement of public high school students in grades 9 through 11 prior to and subsequent to Florida's R.A.I.S.E. and Educational Reform Acts of 1983 was examined for significant change via students' total battery score of the CTBS. The two groups of students identified for this longitudinal review were summarized in Tables 16 and 17. Data include the initial sample at the 9th grade level with a follow-up of those same sample students in the 10th and 11th grades who took the CTBS for school years 1980-83 and 1983-86.

The Northern region of the Brevard public school district was made up of two 9-12 high schools with 64.28% and 68.75% of their sample completing the CTBS for school years 1980-83. A lower percentage of completers was reflected for this same Northern region with 59.32% and 53.32% during school years 1983-86. The Central region of the Brevard public school district was made up of three 9-12 high schools with 42.46%, 67.65%, and 68.00% of their sample completing the CTBS for school years 1980-83. A change in the percentage of completers for the Central region schools can be observed for the 1983-86 school years with 53.33%, 57.14%, and 48.89 percent. The Southern region of the Brevard public school district was made up of one 9-12

high school with students who had a 53.42% completion rate of the CTBS for 1980-83 and a 46.25% completion rate of the CTBS for 1983-86 school years.

Table 16

Brevard County Schools CTBS Sample VS Follow-up 1980-83

HIGH SCHOOL	SAMPLE	3-YEAR RESPONSES	% COMPLETION	AREA
Astronaut	56	36	64.28	North
Titusville	64	44	68.75	North
Cocoa	73	31	42.46	Central
Rockledge	50	34	68.00	Central
Cocoa Beach	34	23	67.65	Central
Palm Bay	73	39	53.42	South
TOTAL	350	207	59.14	ALL

Table 17

Brevard County Schools CTBS Sample VS Follow-up 1983-86

HIGH SCHOOL	SAMPLE	3-YEAR RESPONSES	% COMPLETION	AREA
Astronaut	59	35	59.32	North
Titusville	71	38	53.52	North
Cocoa	60	32	53.33	Central
Rockledge	45	22	48.89	Central
Cocoa Beach	35	20	57.14	Central
Palm Bay	80	37	46.25	South
TOTAL	350	184	52.57	ALL

Tests of Significance for Research Questions

The purpose of this study was defined in terms of six research questions which involved the analyses of opinion surveys and CTBS total battery achievement scores. This section addresses each question with regard to its statistical significance based upon the method of analysis used; all tests for significance were performed at the .05 level. Due to the differences in sample sizes, Bartlett's chi-square test was used to test for homogeneity among the variances.

The range of scores for the groups in response to the category of statements were such that 1. score between 4 and 7 reflected an opinion of strong agreement, 2. score between 8 and 11 reflected an opinion of agreement, 3. score of 12 reflected a neutral opinion, 4. score between 13 and 16 reflected an opinion of disagreement, 5. score between 17 and 20 reflected an opinion of strong disagreement.

Test of Research Question One

Q. 1. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased minimum grade point average needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 18, Grade Level Opinion of Increased GPA, reflects the number, mean, and standard deviation for the grade levels of students, and school staff (e.g., administrators, counselors, and teachers). Bartlett's chi-square test on the within-cell variances was used with probability determined at .007 for significance. Follow-up analysis was performed by t-tests between all the combinations of means where the F-ratio was found significant at the .010 level.

Table 18

Grade Level Opinion of Increased GPA

GRADE	N	MEAN	SD
Ninth	61	12.8525	1.9221
Tenth	57	12.7895	2.6507
Eleventh	55	12.2909	2.5868
Twelfth	60	12.3167	2.2586
Administrators	11	10.2727	3.8494
Counselors	18	10.9444	3.3863
Teachers	21	12.1429	2.7620

Note. Chi-square value = 17.676, df = 6, p = .007.

Results for Research Question One Regarding GPA

The ANOVA Summary Table (GPA), as reported in table 19, reflected a significance level of .010. Follow up t-tests reflected a difference of opinion between the ninth graders and the administrators with significance

at p = .0021 and between the ninth graders and counselors at p = .0054. Additionally, t-tests reflected a difference between the tenth graders and administrators with significance at p = .0028, and between the tenth graders and counselors at p = .0075. Also, t-tests reflected a difference between the eleventh graders and administrators with significance at p = .0166. Lastly, t-tests reflected a difference between the twelfth graders and administrators at p = .0146, between the twelfth graders and counselors at p = .0449, and between administrators and teachers at p = .0484.

In summary, the data for research question one reflected the opinions of administrators and counselors as having a mean score of 10.2 and 10.9 respectively, which depicted them as being in agreement with Florida's R.A.I.S.E. policy of a minimum grade point average for a regular high school diploma. However, those students in grades 9-12, as well as teachers who were surveyed, showed a mean score of 12.1 - 12.8 for the battery of opinion statements thereby reflecting a neutral position, i.e. neither for nor against Florida's R.A.I.S.E. policy of a minimum GPA.

Table 19

ANOVA Summary Table (GPA) with t-Tests Results

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	110.5804	18.4301	2.869	0.010*
Error	276	1773.1723	6.4245		
Total	282	1883.7527			

t-test Between Cell Means (GPA)

VALUE (t)	VALUE (p)	FACTOR	FACTOR
t = 3.107	p = 0.0021	9th Grade	Administrators
t = 2.8064	p = 0.0054	9th Grade	Counselors
t = 3.0151	p = 0.0028	10th Grade	Administrators
t = 2.6923	p = 0.0075	10th Grade	Counselors
t = 2.4107	p = 0.0166	11th Grade	Administrators
t = 2.4586	p = 0.0146	12th Grade	Administrators
t = 2.0145	p = 0.0449	12th Grade	Counselors
t = 1.9824	p = 0.0484	Administrators	Teachers

* Note. Significant at .05; values of p are for a two-tailed test where $p < .05$.

Test for Research Question Two

Q. 2. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 20, Grade Level Opinion of Required Number of Credits, reflects the number, mean, and standard

deviation for grade levels of students and school staff. Bartlett's chi-square test on the within-cell variances was used with probability determined at .867; follow-up analysis was performed by *t*-tests between all the combinations of means where the F-ratio was found significant at a probability level of .001.

Table 20

Grade Level Opinion of Required Number of Credits

GRADE	N	MEAN	SD
Ninth	61	13.0984	2.4746
Tenth	57	13.7719	2.6255
Eleventh	55	13.4364	2.3552
Twelfth	60	12.6667	2.5222
Administrators	11	11.3636	2.0627
Counselors	18	11.5556	2.7701
Teachers	21	14.1905	2.8917

Note. Chi-square value = 2.517, df = 6, *p* = .867.

Results for Research Question Two

The ANOVA summary table (required number of credits) with *t*-tests, as reported in Table 21, indicated a significance level at .001. Follow-up analysis was performed by *t*-tests between combinations of means where the F-ratio was found significant at .001. A difference of opinion was found between ninth grade students and administrators with a significance

level at p = .0373 and between the ninth grade students and counselors with a significance level at p = .0238. Additionally, differecnes were found between the tenth grade students and the twelfth grade students where p = .0189, between the tenth grade students and administrators where p = .0042, and between the tenth grade students and counselors where p = .0013. Also, a difference of opinion was found between the eleventh grade students and administrators with a significance level at p = .0138, and between the eleventh grade students and counselors where p = .0066. T-tests results also reflected a difference of opinion between the twelfth grade students and teachers where p = .0183, between the administrators and teachers where p = .0029, and between the counselors and teachers where p = .0013.

In summary, data for research question two reflected the opinions of administrators and counselors with a mean score of 11.3 and 11.5 respectively as being inclined to agree with Florida's policy requiring 24 credits for a regular high school diploma. However, surveyed teachers and students in grades 9-11 portrayed a mean score ranging from 13 to 14 which reflected a disagreement with Florida's 24 credit policy. Students surveyed in the twelfth grade displayed a mean score of 12 which portrayed them with a neutral opinion.

Table 21

ANOVA Summary Table (Required Number of Credits) with T-test Results

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	144.1379	24.0230	3.749	0.001*
Error	276	1768.5335	6.4077		
Total	282	1912.6714			

t-test (Required Number of Credits)

VALUE (t)	VALUE (p)	FACTOR	FACTOR
t = 2.0921	p = 0.0373	9th Grade	Administrators
t = 2.2722	p = 0.0238	9th Grade	Counselors
t = 2.3607	p = 0.0189	10th Grade	12th Grade
t = 2.8889	p = 0.0042	10th Grade	Administrators
t = 3.2384	p = 0.0013	10th Grade	Counselors
t = 2.4791	p = 0.0138	11th Grade	Administrators
t = 2.7362	p = 0.0066	11th Grade	Counselors
t = 2.3742	p = 0.0183	12th Grade	Teachers
t = 3.0004	p = 0.0029	Administrators	Teachers
t = 3.2406	p = 0.0013	Counselors	Teachers

* Note. Significant at .05; values of p are for a two-tailed test where $p < .05$.

Test for Research Question Three

Q. 3. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward

the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?

Table 22, One-Way ANOVA: Seven Period Day, reflects the number, mean, and standard deviation for grade levels of students and school staff. Bartlett's chi-square test on the within-cell variances was used with probability determined at .945.

Table 22

One-Way ANOVA: Seven-Period Day

GRADE	N	MEAN	SD
Ninth	61	14.2131	3.6657
Tenth	57	14.2632	4.0423
Eleventh	55	12.9818	3.7292
Twelfth	60	13.9667	3.5889
Administrators	11	11.9091	4.3464
Counselors	18	12.5556	4.1476
Teachers	21	14.2857	3.6626

Note. Chi-Square value = 1.706, df = 6, p = .945.

Results for Research Question Three

Results of the one-way ANOVA as listed in table 23, ANOVA Summary Table (Seven-Period Day), did not indicate a significant difference of opinion for the surveyed groups of students and staff. An F of 1.529 for the between groups and probability of p = .169 did not reflect significant differences for the groups surveyed.

Table 23

ANOVA Summary Table (Seven-Period Day)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	132.3331	22.0555	1.529	0.169
Error	276	3981.8365	14.4269		
Total	282	4114.1696			

Although there was not a significant difference in the opinions of the surveyed groups, their mean scores did range from 12.5 to 14.2 for the counselors, teachers, and students in grades 9-12; these mean scores depicted an opinion which disfavored Florida's R.A.I.S.E. policy of a 7-period day. The administrators surveyed posted a mean score of 11.9 which reflected a more neutral opinion of Florida's 7-period day policy.

Test for Research Question Four

Q. 4. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

Table 24, Grade Level Opinion of Extracurricular Activities, reflects the number, mean, and standard deviations for grade levels of students and school

staff. Bartlett's chi-square test on the within-cell variances was utilized with probability determined at .939. Standard deviations for grade level of students ranged from 2.6036 for the twelfth grade to 2.7739 for the ninth grade. Standard deviations for staff members within the surveyed schools ranged from 2.3394 for administrators to 3.1849 for counselors.

Table 24

Grade Level Opinion of Extracurricular Activities

GRADE	N	MEAN	SD
Ninth	61	12.8525	2.7739
Tenth	57	12.9474	2.6078
Eleventh	55	12.5091	2.7344
Twelfth	60	12.0333	2.6036
Administrators	11	11.5455	2.3394
Counselors	18	12.5556	3.1849
Teachers	21	12.1905	2.6762

Note. Chi-square value = 1.779, df = 6, p = .939.

Results for Research Question Four

Results of the one-way ANOVA for opinions surveyed regarding extracurricular activities, as listed in table 25, did not indicate that there was a significant difference of opinion for the surveyed groups of students and staff where F = 1.006 with a level of p = .422.

The mean score for each of the groups surveyed for research question four ranged from 11.5 for administrators to 12.9 for the tenth grade students. This narrow range of mean scores reflected a neutral opinion (i.e. neither for nor against the policy) of all of the groups surveyed toward Florida's policy of a minimum academic level of achievement for students to participate in extracurricular activities.

Table 25

ANOVA Summary Table (Extracurricular Activities)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	44.1039	7.3506	1.006	0.422
Error	276	2016.6028	7.3065		
Total	282	2060.7067			

Test for Research Question Five

Q. 5. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 26, Academic Courses for Graduation, reflects the number, mean, and standard deviation for the grade levels of students and school staff. Mean scores ranged from a low of 9.7000 for the twelfth grade students to a

high of 13.4762 for the group of teachers surveyed. Standard deviations ranged from 2.5089 for the ninth grade students to 3.8216 for the counselors surveyed. Bartlett's chi-square test on within-cell variances was used with p = .086. Follow-up analysis was performed by t-tests between all the combinations of means where the F-ratio was found significant at p = .000.

Table 26

Academic Courses for Graduation

GRADE	N	MEAN	SD
Ninth	61	9.8525	2.5089
Tenth	57	10.6316	3.1375
Eleventh	55	10.5273	2.8275
Twelfth	60	9.7000	3.5620
Administrators	11	10.8182	2.8572
Counselors	18	12.3889	3.8216
Teachers	21	13.4762	2.5223

Note. Chi-square value = 11.087, df = 6, p = .086.

Results for Research Question Five

The ANOVA summary table (academic courses for graduation), Table 27, indicated a significance level at p = .0000. Follow-up analysis was performed by t-tests between combinations of means where the F-ratio was found significant. A difference of opinion was found between ninth grade students and counselors at p =

.0021, and between ninth grade students and teachers at p = .0000. Opinion also differed between the tenth grade students and counselors where p = .0339, and between the tenth grade students and teachers at p = .0003. Additionally, a difference was found between the eleventh grade students and counselors where p = .0254 and between the eleventh grade students and teachers at p = .0002. Also, t-tests results reflected a difference between the twelfth grade students and counselors where p = .0012 and between the twelfth grade students and teachers at p = .0000 as well as between the administrators and teachers at p = .0199.

In summary, the mean scores for the surveyed students in grades 9-12 as well as the administrators ranged from 9.7 to 10.8 which reflected an opinion in agreement with Florida's policy of increased academic courses for graduation. However, the counselors surveyed reflected a mean score of 12.3 which depicts an opinion of neutrality toward Florida's policy of increased academic courses for graduation. Conversely, the teachers surveyed reflected a mean score of 13.4 which portrays an opinion of disagreement with the policy of increased academic requirements in Florida.

Table 27

ANOVA Summary Table (Academic Courses for Graduation)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	314.7200	52.4533	5.641	0.000*
Error	276	2566.3966	9.2985		
Total	282	2881.1166			

t-test (Academic Courses for Graduation)

VALUE (t)	VALUE (p)	FACTOR	FACTOR
t = 3.1010	p = .0021	Ninth	Counselors
t = 4.6970	p = .0000	Ninth	Teachers
t = 2.1315	p = .0339	Tenth	Counselors
t = 3.6544	p = .0003	Tenth	Teachers
t = 2.2482	p = .0254	Eleventh	Counselors
t = 3.7700	p = .0002	Eleventh	Teachers
t = 3.2812	p = .0012	Twelfth	Counselors
t = 4.8842	p = .0000	Twelfth	Teachers
t = 2.3420	p = .0199	Administrators	Teachers

* Note. Significant at .05; values of p are for a two-tailed test where p< .05.

Research Question Six and Significance

Q. 6. Have achievement levels among secondary students, as measured by the Comprehensive Test of Basic Skills, in grades 9 through 11 of the Brevard County Public Schools, changed significantly subsequent to

implementation of the R.A.I.S.E. and Education Reform Acts of Florida?

A two factor analysis of variance was used for research question six to examine CTBS total battery test results for significant difference of achievement between the pre-R.A.I.S.E. and post-R.A.I.S.E. era. Two groups of ninth grade students' scores over a three year period of time, 1980-83 (pre-R.A.I.S.E. = Group A) and 1983-86 (post-R.A.I.S.E. = Group B), were examined. Table 28 contains data reflecting the number, mean, and standard deviations of students at different grade levels with regard to the pre-R.A.I.S.E./post-R.A.I.S.E. era of 1980-83 and 1983-86. The number of students in group A (n=207) who completed the CTBS for three consecutive years was comparable to the number of students in group B (n=184). Mean score for total battery CTBS was higher for group B for each of the grade levels as compared to group A. The standard deviation for group A ranged from 19.63 for the ninth grade to 20.89 for the twelfth grade, displaying a progressive increase. The standard deviation for group B ranged from 15.15 for the ninth grade to 17.34 for the tenth grade with an eleventh grade standard deviation of 16.25.

Table 28

Pre/Post R.A.I.S.E.: CTBS Total Battery, 9-11th Grade

Group	N	Mean	Variance	Standard Deviation	Standard Error of Mean
A-9th	207	59.01	385.63	19.63	1.36
A-10th	207	58.69	420.39	20.50	1.42
A-11th	207	56.33	436.63	20.89	1.45
B-9th	184	63.31	229.65	15.15	1.11
B-10th	184	61.83	300.93	17.34	1.27
B-11th	184	59.58	264.17	16.25	1.19

Note. Group A= pre-R.A.I.S.E.; group B= post-R.A.I.S.E.

Results for Research Question Six

Results of the two-way ANOVA for students' total battery CTBS indicated a difference between groups as determined by the results of multiple comparison tests where $p < .05$. Results of the two-way Anova as presented in table 29, Two-Way ANOVA Summary Table: Pre/Post R.A.I.S.E. - CTBS, indicated significance for each of the variables "R.A.I.S.E." ($p = .001$), and "grade level CTBS scores" ($p = .045$); interaction was not found significant where $p = .890$.

Table 29

Two-Way ANOVA Summary Table: Pre/Post R.A.I.S.E.-CTBS

Source of Variation	DF	Sum of Squares	Mean Squares	F	Significance Level
A (RAISE)	2	3710.7631	3710.7631	10.8038	0.001*
B (gr. 9-11)	2	2128.5505	1064.2753	3.0986	0.045*
AB (interact)	2	80.1106	40.0553	0.1164	0.890
Error	1167	401432.8859	343.9870		
Total	1172	407352.3101			

* Note. Significant at the .05 level

A t-test was performed on each grade levels' total battery score by era, e.g., pre-R.A.I.S.E. and post-R.A.I.S.E., to determine probability of significance after submitting data into a two-way ANOVA. Follow-up analysis of the two groups, pre/post R.A.I.S.E., and the three grades levels for each groups (9-11), is reported in table 30. T-tests between combinations of means were used where the F-ratios were found significant. The follow-up analysis by t-tests for those areas found significant was between the pre-R.A.I.S.E. and post-R.A.I.S.E. groups where p = .0011 and between the ninth grade and eleventh grade where p = .0169. Interaction was not found to be significant for the grade level students in their respective groups of pre-R.A.I.S.E., post-R.A.I.S.E. where p = .8901.

Table 30

T-Test Between Cell Means: Pre/Post R.A.I.S.E.-CTBS

VALUE	FACTOR	LEVEL
t = 3.2844	Factor (A)	Level 1 (pre-RAISE)
p = .0011	Factor (A)	Level 2 (post-RAISE)
t = 2.3928	Factor (B)	Level 1 (ninth grade)
p = .0169	Factor (B)	Level 3 (eleventh grade)

Note. F-tests for Factors A & B pool interaction & error terms; values for p are for a two-tail test.

The longitudinal survey results of the pre-R.A.I.S.E. and post-R.A.I.S.E. students for research question six reflected a decline in the CTBS total battery score as students progressed from the ninth grade to the eleventh grade for both groups. However, the total battery CTBS mean score for students in the ninth grade for the pre-R.A.I.S.E. group was 4.3 percentage points below the mean score for students in the ninth grade for the post-R.A.I.S.E. group. Likewise, students in the pre-R.A.I.S.E. tenth grade mean score were 3.14 percentage points below the post-R.A.I.S.E. tenth grade, and students in the pre-R.A.I.S.E. eleventh grade displayed a mean score of 3.25 percentage points below the post-R.A.I.S.E. eleventh grade.

Summary of Chapter Four

A one way analysis of variance (ANOVA) was used for each research question one through five. Table 31,

ANOVA Summary of Variables, reflects the F values for the variables titled "GPA," "# of credits," "Seven Pd. Day," "Extracurricular Activities," and "Graduation Req." Three variables were found to have levels of significance where $p < .05$: (1) An F value of 2.8687 for GPA was found to have a significance level of $p = .01$; (2) the F value of 3.7491 for the variable "# of credits" was found to have a significance level of $p = .0013$; (3) the F value for "Graduation Req." was 5.6410 with a significance level of $p = .0000$.

The variable titled "Seven Pd. Day" had an F value of 1.5288 and was found not to be significant where $p = .1687$. The variable titled "Extracurricular Activities" had an F value of 1.0060 which was not significant where $p = .4216$.

Table 31

ANOVA Summary of Variables

Variable	MS Between[a]	MS Within[b]	F	p
GPA	18.4301	6.4245	2.8687	.0100*
# of Credits	24.0230	6.4077	3.7491	.0013*
Seven Pd. Day	22.0555	14.4269	1.5288	.1687
Extracurr. Act.	7.3506	7.3065	1.0060	.4216
Graduation Req.	52.4533	9.2985	5.6410	.0000*

[a] df = 6
[b] df = 276
* Note. Significant at $p < .05$

A summary of the one-way ANOVAs is presented in table 31 with the five variables listed according to their respective between and within groups, calculated F value, and significance. Values of the ANOVAs which indicated a significant difference of opinion contained results of a multiple comparison test where $p < .05$ existed for the following:

Q. 1. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased minimum grade point average (GPA) needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts? Significance was determined.

Q. 2. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts? Significance was determined.

Q. 5. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts? Significance was determined.

Results of the ANOVA that did not indicate a significant difference of opinion (i.e., $p > .05$) were noted in response to the following research questions:

Q. 3. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts? Significance was not supported.

Q. 4. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts? Significance was not supported.

A two factor analysis of variance (ANOVA) was used for research question six to examine the CTBS total battery test results of two groups of students (pre-RAISE and post-RAISE) over a three year period of time. Results of the two-way ANOVA for students' total battery CTBS indicated a significant difference between groups as determined by the results of multiple comparison tests where $p < .05$. Those areas found significant were between the pre-R.A.I.S.E. and post-R.A.I.S.E. groups where $p = .0011$, and between the

ninth grade and eleventh grade where $p = .0169$. Interaction, however, was not found to be significant for the grades in their respective groups where $p = .8901$ for research question six:

Q. 6. Have achievement levels among secondary students, as measured by the Comprehensive Test of Basic Skills, in grades 9 through 11 of the Brevard County Public Schools, changed significantly ($p < .05$) subsequent to implementation of the R.A.I.S.E. and Education Reform Acts of Florida? Significance was determined.

Overall Summary for Research Questions 1-6

Q. 1. The data for research question one reflected the opinions of administrators and counselors as having a mean score of 10.2 and 10.9 respectively, which depicted them as being in agreement with Florida's R.A.I.S.E. policy of a minimum grade point average (GPA) for a regular high school diploma. However, those students in grades 9-12, as well as teachers which were surveyed, showed a mean score of 12.1 - 12.8 for the battery of opinion statements thereby reflecting a neutral position, i.e. neither for or against Florida's R.A.I.S.E. policy of a minimum GPA.

Q. 2. Data for research question two reflected the opinions of administrators and counselors with a mean

score of 11.3, and 11.5 respectively as being inclined to agree with Florida's policy requiring 24 credits for a regular high school diploma. However, surveyed teachers and students in grades 9-11 portrayed a mean score ranging from 13 to 14 which reflected a disagreement with Florida's 24 credit policy. Students surveyed in the twelfth grade displayed a mean score of 12 which portrayed them as being neutral in their opinions about the 24 credit policy.

Q. 3. Although there was not a significant difference in the opinions of the surveyed groups for research question three, their mean scores did range from 12.5 to 14.2 for the counselors, teachers, and students in grades 9-12; these mean scores depicted an opinion which disfavored Florida's R.A.I.S.E. policy of a 7-period day. The administrators surveyed posted a mean score of 11.9 which reflected a more neutral opinion of Florida's 7-period day policy.

Q. 4. The mean score for each of the groups surveyed for research question four ranged from 11.5 for administrators to 12.9 for the tenth grade students. This narrow range of mean scores reflected a neutral opinion (i.e. neither for or against the policy) of all of the groups surveyed toward Florida's policy of a

minimum academic level of achievement for students to participate in extracurricular activities.

Q. 5. The mean scores for the students in grades 9-12 as well as the administrators surveyed for question five ranged from 9.7 to 10.8 which reflected an opinion in agreement with Florida's policy of increased academic courses for graduation. However, the counselors surveyed reflected a mean score of 12.3 which depicts an opinion of neutrality toward Florida's policy of increased academic courses for graduation. Conversely, the teachers surveyed reflected a mean score of 13.4 which portrays an opinion of disagreement with the policy of increased academic requirements in Florida.

Q. 6. The longitudinal survey results of the pre-R.A.I.S.E. and post-R.A.I.S.E. students for research question six reflected a decline in the CTBS total battery score as students progressed from the ninth grade to the eleventh grade for both groups. However, the total battery CTBS mean score for students in the ninth grade for the pre-R.A.I.S.E. group was 4.3 percentage points below the mean score for students in the ninth grade for the post-R.A.I.S.E. group. Likewise, students in the pre-R.A.I.S.E. tenth grade had a mean score of 3.14 percentage points below the students in the post-R.A.I.S.E. tenth grade; students in

the pre-R.A.I.S.E. eleventh grade performed at a level with a mean score of 3.25 percentage points below the students in the post-R.A.I.S.E. eleventh grade.

Chapter Four has included an analysis of data which provided a description of the survey categories for this study, as well as results relating to the significance for each of the six research questions. An overall interpretation of the analyses as well as conclusions, implications, and recommendations of this study are presented in Chapter 5.

CHAPTER 5
CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

The R.A.I.S.E. and Education Reform Acts of Florida (1983) changed existing laws and created new requirements for the public high school diploma in Florida to provide for increased accountability of the schools to the public. Prior to these reform acts, the following standards existed in the public school districts of Florida: (a) graduation requirements in Florida were established by each of the districts in their pupil progression plan, (b) a statewide GPA requirement was nonexistent but districts generally did require a 1.0 GPA for graduation (a "D" average), (c) the length of the school day and year was defined only as 180 days or equivalent hours for grades K through 12 with each district determining the number of classes met per day.

In 1986, the U.S. Department of Education reported the total credits needed for graduation and specific course credit requirements for each of the states. Florida led the nation at that time in both of these

areas surveyed and continues to maintain that position (U.S. D.O.E., 1986).

A review of the literature showed that the majority of the United States have changed and/or increased their minimum requirements for a high school diploma since 1983 with varying results on achievement of students. Most notably, however, are the effects of the reform movement on the minority populations of blacks and bilingual students. Support for increased expectations of students was found in earlier research of the late 1960s and early 1970s but more recent studies by researchers showed that this type of demand favored predominately the high-ability student and lost the low-ability student.

Common expressions of a lack of accountability gave rise to a renewed cyclical emphasis on promotion standards with 50% of the United States resorting to some form of competency based test for academic promotion between the grades or schools, i.e., elementary school to junior high school to senior high school. The researchers noted in the literature review indicated that for those students labeled low-ability, the possibility of not being promoted is much greater especially for blacks and bilingual students. Negative findings regarding retention of low-ability students

have been supported in the literature such as subsequent year lower achievement, diminished self-image, poor school attitude, and a less than satisfactory emotional adjustment. Mixed results were discussed with reference to the amount of time spent on homework as a contributing factor to academic achievement. The researchers identified in the literature supported participation in extracurricular activities as having a positive effect on student achievement during times of participation. Students who worked after school hours for a moderate period of time were observed as not having difficulty in their coursework. However, when increased work load after hours approached 20 hours or more, negative effects on achievement were observed. The review of literature reflected reform efforts on the overall student population as appearing to have positive effects on the average and high-ability student but mixed effects on the low-ability student.

The Florida state legislators, by implementation of the R.A.I.S.E. and Educational Reform Acts, have created demands and possible conflicts for students. Changes come from the local level, and the likelihood of success of change rests heavily on the attitudes of the local school administrators, counselors, and teachers. As with many educational programs, public secondary school

administrators, teachers, and students may display an exuberance or a reluctance to change and may produce either a positive or negative impact on academic achievement. The opinions of the local public secondary school populous examined in this study may aid the state of Florida legislators and Department of Education administrators in evaluating the impact of the R.A.I.S.E. and Education Reform acts. The inspection of Brevard's local high schools' students' standardized achievement test scores and an analysis of administrators', counselors', students', and teachers', opinions towards the new graduation requirements may provide information that could preclude other state governing members from making similar laws until evaluative tools have been established.

Conclusions

The purpose of this study was to determine how a select group of educators and students of the Brevard County, Florida, public school system appraised the implementation of the requirements of the Florida R.A.I.S.E. and Education Reform Acts of 1983. Six questions were addressed and supported by opinion surveys' results, and a longitudinal review of the pre-R.A.I.S.E. and post-R.A.I.S.E. students. Within the

limitations and scope of this study, the data obtained tend to support the following conclusions:

Q. 1. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased minimum grade point average (GPA) needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

The evidence showed that there was a significant difference ($p < .05$) among the opinions of the groups surveyed:

1. The students in the ninth grade differed from their high school administrators ($p = .0021$); the students in the ninth grade also differed from their high school counselors ($p = 0054$).

2. The students in the tenth grade differed from their high school administrators ($p = .0028$); the students in the tenth grade also differed from their high school counselors ($p = 0075$).

3. The students in the eleventh grade differed from their high school administrators ($p = 0166$).

4. The students in the twelfth grade differed from their high school administrators ($p = .0146$); the students in the twelfth grade differed from their high school counselors ($p = .0449$).

5. The high school administrators differed from their teachers ($p = .0484$).

6. The high school administrators and counselors were in agreement with Florida's R.A.I.S.E. policy of a minimum 1.5 grade point average (GPA) for a regular high school diploma.

7. Public school students in grades 9-12, as well as teachers surveyed reflected a neutral position, i.e. neither for nor against Florida's R.A.I.S.E. policy of a minimum 1.5 GPA.

Q. 2. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

The evidence showed that there was a significant difference among the opinions of the groups surveyed:

1. The students in the ninth grade differed from their high school administrators ($p = .0373$); the students in the ninth grade also differed from their high school counselors ($p = .0238$).

2. The students in the tenth grade differed from students in the twelfth grade ($p = .0189$).

3. Tenth grade students differed from their high school administrators ($p = .0042$); tenth graders also differed from their high school counselors ($p = .0013$).

4. The students in the eleventh grade differed from their high school administrators ($p = .0138$); the students in the eleventh grade also differed from their counselors ($p = .0066$).

5. The students in the twelfth grade differed from their high school teachers ($p = .0183$).

6. The high school administrators differed from their teachers ($p = .0029$).

7. The high school counselors differed from the high school teachers ($p = .0013$).

8. High school administrators and counselors reflected agreement with Florida's policy requiring 24 credits for a regular high school diploma.

9. High school teachers and students in grades 9-11 reflected disagreement with Florida's 24 credit policy.

10. Public school students surveyed in the twelfth grade were neutral in their opinions about the 24 credit policy.

Q. 3. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students

(grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?

1. There was not a significant difference in the opinions of the surveyed groups.

2. The counselors, teachers, and students in grades 9-12 reflected an opinion which disfavored Florida's R.A.I.S.E. policy of a 7-period day.

3. The administrators surveyed reflected a more neutral opinion of Florida's 7-period day policy.

Q. 4. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

1. There was not a significant difference in the opinions of all of the surveyed groups.

2. Scores for all of the surveyed groups reflected a neutral opinion (i.e. neither for nor against the policy) toward Florida's policy of a minimum academic level of achievement for students to participate in extracurricular activities.

Q. 5. Is there a statistically significant difference ($p < .05$) among the opinions of administrators, counselors, teachers, and students

(grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

The evidence showed that there was a significant difference among the opinions of the groups surveyed:

1. The students in the ninth grade differed from their high school counselors ($p = .0021$); the students in the ninth grade also differed from their high school teachers ($p = .0000$).

2. The students in the tenth grade differed from their high school counselors ($p = .0339$); the students in the tenth grade also differed from their high school teachers ($p = .0003$).

3. The students in the eleventh grade differed from their high school counselors ($p = .0254$); the students in the eleventh grade also differed from their high school teachers ($p = .0002$).

4. The students in the twelfth grade differed from their high school counselors ($p = .0012$); the students in the twelfth grade also differed from their high school teachers ($p = .0000$).

5. The high school administrators differed from their teachers ($p = .0199$).

6. The public school students in grades 9-12 as well as the high school administrators reflected an

opinion in agreement with Florida's policy of increased academic courses for graduation.

7. The counselors surveyed reflected an opinion of neutrality toward Florida's policy of increased academic courses for graduation.

8. The teachers surveyed reflected an opinion of disagreement with the policy of increased academic course requirements in Florida.

Q. 6. Have achievement levels among secondary students, as measured by the Comprehensive Test of Basic Skills (CTBS), in grades 9 through 11 of the Brevard County Public Schools, changed significantly ($p < .05$) subsequent to implementation of the R.A.I.S.E. and Education Reform Acts of Florida?

The evidence showed that there was a significant difference among the CTBS total battery scores of the groups surveyed:

1. The pre-R.A.I.S.E. (1980-83) students in grades 9-11 differed from the post-R.A.I.S.E. (1983-86) students in grades 9-11 ($p = .0011$).

2. Students' achievement between the ninth and eleventh grades differed for both the pre-R.A.I.S.E. and post-R.A.I.S.E. era ($p = .0169$).

3. The results of the longitudinal survey of the two groups of students did reflect a similar decline in

the mean score for the total battery score of the CTBS as students progressed from the ninth grade to the eleventh grade.

4. Students' total battery scores in the pre-R.A.I.S.E. ninth grade were below the scores for the post-R.A.I.S.E. ninth grade.

5. Students' total battery scores in the pre-R.A.I.S.E. tenth grade were below the scores for the post-R.A.I.S.E. tenth grade.

6. Students' total battery scores in the pre-R.A.I.S.E. eleventh grade were below the scores for the post-R.A.I.S.E. eleventh grade.

Implications

Note should be taken that the implications were drawn from the conclusions in the sample for this study and the literature imposed by definition and selection. Caution should be exercised in making broad applications to populations which are not similar in design.

GPA Requirement

The results of this research have led to these implications regarding the 1.5 GPA requirement for a regular diploma since implementation of Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. Administrators may be viewed as supportive of state imposed mandates regarding an increased GPA for a high school diploma.

2. Counselors view increased GPA requirements favorably as a measure of academic success either for the college or non-college bound student.

3. Students will adhere to the requirements of a higher GPA for graduation because it is mandated by a higher authority. If a 1.5 GPA is expected of a student for graduation, and the student knows of the policy, they will adhere to said policy if their goal is a regular diploma.

4. Teachers may be viewed as neutral in their opinion of an increased GPA for a diploma since they have little control over the policymakers and the administrators of the mandates in their classroom. Teacher control is more reflected in the separate success of the individual student for their class rather than the total program for the student.

Increased Credit Requirement

The results of this research has led to these implications regarding the increase in the number of credits required for a regular diploma since implementation of Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. Students in grades 9-11 who disfavored the increased credits policy may have done so because they are directly affected by the impact of the policy; academic performance may be affected by the negative opinions expressed toward the need for more credits than their senior classmates for a regular diploma.

2. Seniors who reflected a neutral position may have already met the necessary diploma requirements and are not directly affected or threatened by the policy.

3. Teachers disfavoring the increased credit policy may communicate their displeasure to the students thereby creating a lessened morale toward teaching.

4. Administrators and counselors may have responded favorably to the credit policy since their responsibility is to enforce the state and district mandated policy.

Increased Class Periods

The results of this research has led to these implications regarding the increase in the number of class periods to a 7-period day since implementation of Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. Teachers who disagreed with the 7-period day may believe that an increased number of classes within a school day will not necessarily lead to an increase in a students' academic status.

2. Teachers who disagreed with the 7-period day may have done so as a reaction to the need for them to teach an additional class without additional salary or may have seen the 7-period day as one which would include them in more supervisory duty.

3. Students who disfavored the increase in classes for a 7-period day may have done so since they are directly affected by the rule and are required to produce more homework, interact with another teacher, and relate to an additional set of peers.

4. Counselors who disfavored the 7-period day may have done so because they are directly affected in maintaining a students' cumulative folder with additional coursework as well as helping the student choose an additional class for each term.

5. Administrators who were neutral in their opinion of the 7-period day may have expressed themselves as such since they are in no way directly affected by the change.

GPA and Extracurricular Activities

Although the results of this research were not significant, the neutral opinion of those surveyed groups has led to the following implications regarding the requirement of a 1.5 GPA for a student to participate in extracurricular activities since

implementation of Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. The sample may not have included students, i.e. athletes, who were directly impacted by the rule.

2. Since all groups reflected a neutral position of neither for nor against the policy of a 1.5 GPA for participation in extracurricular activities, the policy may not be important to the survival of the programs involved.

Increased Required Academic Courses

The results of this research has led to these implications regarding the increase in the required academic courses for a regular high school diploma since Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. Students may agree with the policy of increased academic courses for a diploma because it removes the necessity of decision making pertaining to selection of elective courses.

2. Students may agree with the policy of increased academic courses for a diploma due to the increased requirements for entrance into college.

3. Administrators reflected an agreement with the increased course requirement since they are not directly impacted by the enforcement of the policy.

4. Counselors appear neutral to the policy of increased course requirements since they are faced with tracking a students' progress regardless of the type of coursework attempted; the policy afforded students less opportunity for choosing electives and therefore presented counselors with less in the students' program to decide for a diploma.

5. Teachers may have disagreed with the increase in academic courses since they may have been directly affected as a teacher of courses in the elective fields; teachers may fear that they will have to teach a course out-of-field if there is little demand for the courses/programs they were originally hired to teach.

CTBS Achievement Levels: Pre/Post R.A.I.S.E.

The results of this research has led to these implications regarding achievement levels based upon the overall increase in standards for a regular high school diploma since implementation of Florida's R.A.I.S.E. and Education Reform Act of 1983:

1. Post-R.A.I.S.E. students in the 9th grade may have felt the need to achieve at a higher level as precipitated by the increased requirements imposed upon them.

2. A similar decline in total battery test scores for both pre/post R.A.I.S.E. students may be a reflection of test familiarity for the groups.

Recommendations

The following recommendations are submitted as a result of the conclusions and implications of this study:

1. Monitor the state-wide grading scale for each of the districts; insure implementation in all districts with equal weighting factors if any exist.

2. Provide incentives for teachers to participate in college credit courses, inservice programs, and workshops to improve and increase their fields of certification.

3. Administrative tasks for teachers should be lessened for those with additional class loads imposed by the 7-period day policy.

4. Provide sabbatical leave for teachers to improve and increase their fields of certification.

5. Provide additional counselors at the high school level to reduce the ratio of counselor/student to 1:300.

6. Provide for additional clerical help to assist counselors.

7. Provide students with the option of "open" periods, e.g. partial day enrollment, without jeopardizing full time equivalent monies (FTE) earned by the district when credit requirements have been met.

8. Reduce the standardized achievement testing program to lessen test familiarity and redundancy.

As a result of the conclusions of this study, the following recommendations for further study are submitted:

1. Examine the dropout rate of students first affected by the 24 credit rule for a regular diploma and compare to each succeeding year of dropouts.

2. Examine teacher morale of those teachers impacted by the 7-period day who have additional duties and responsibilities imposed by the implementation of the policy.

3. Examine the impact of policies relating to the 7-period day and required academic courses on elective programs and teachers of those elective programs in the high school curriculum.

APPENDIX A

OPINION SURVEY

OPINION SURVEY OF
FLORIDA'S R.A.I.S.E. AND EDUCATION REFORM ACTS

DIRECTIONS: Using a No. 2 lead pencil, please indicate whether you strongly agree = (A), agree = (B), disagree = (C), strongly disagree = (D), or you do not know = (E) about each statement below by filling in the appropriate circle on side one of the NCS form provided for each of the items. A small glossary listed herein may assist you with a few of the terms.

GLOSSARY

Grade Point Average. Grade point average (GPA) is the average of points accrued from courses taken for credit having a weight factor of four points for an "A", three points for a "B", two points for a "C", and one point for a "D"; no points are awarded for an "F", "P" (passing), or an "I" (incomplete).

R.A.I.S.E. & Education Reform Acts. The 1983 Florida Legislature enacted these two bills with a focus on secondary education for grades 9-12. The key provisions of these statutes provided for: (a) increased total credits required for graduation, (b) uniform student performance standards in each major subject area, (c) a minimum GPA for graduation and participation in interscholastic extracurricular activities, and (d) a seven-period day or equivalent instructional minutes (MGT, Inc. 1987, p. 1-1).

SSAT I, II. The Florida Statewide Student Assessment Testing (SSAT) Program is a plan for a systematic, census-like survey of skills mastered by public school students in grades three, five, eight, and ten. The tests are based upon a set of objectives called Minimum Student Performance Standards for Florida Schools, which determine whether a student has mastered the objectives in the areas of mathematics and communications at a minimal level of achievement (Brevard County Instructional Program, 1987, p. 14).

SURVEY

1. Most of this year's first year high school students are more serious about their studies than students who entered high school for the first time four years ago.

2. As a result of Florida's new graduation requirements, most of this year's twelfth graders are more serious about their studies than students who were in the twelfth grade four years ago.

3. The seven period day should be an option rather than a mandate for high school students.

4. The minimum number of high school credits should be the same for college and non-college bound students.

5. Most non-college-bound students would benefit more from a two-credit vocational program than from the two additional credits required in mathematics and science.

6. There has been a sufficient increase in the amount of assistance given to help underachieving ("at-risk") students meet the new graduation requirements.

7. The GPA requirement for student participation in extracurricular activities has removed the incentive for the non-academically inclined student athlete to remain in school.

8. The seven period day has afforded students more homework.

9. The current graduation requirements allow for differentiation among the needs and aspirations of most students.

10. Students' requirement to do more in less time (class sessions were reduced from 55 to 50 minutes) due to implementation of the seven period day has caused an increase in the number of students dropping out.

11. Students should be allowed to schedule free or open periods during the school day if their credit status does not require a full seven period day.

12. Students who have met all district course/credit requirements for graduation, mastered the SSAT-I, and passed the SSAT-II but who have cumulative GPA's less than 1.5 should receive a <u>standard diploma</u>.

13. Students who have met all district course/credit requirements for graduation, mastered the SSAT-I, and passed the SSAT-II but who have cumulative GPA's less than 1.5 should receive a certificate of completion.

14. Student athletes react favorably to the challenge of the current GPA requirements.

15. Students are spending more time with school related extracurricular activities since the implementation of the R.A.I.S.E. and Education Reform Acts of Florida.

16. The seven period day has caused an overall decrease in the long-term participation of students, i.e. more than one semester, in an elective program.

17. The student's overall academic performance has improved in recent years due to an increase in the required course load.

18. Students select easier courses to maintain a higher GPA as a result of the emphasis placed upon achievement.

19. The current GPA requirements for student participation in extracurricular activities have not affected the number of students participating in athletics.

20. Current GPA requirements are one factor attributed to the decrease in the number of students participating in extracurricular activities.

This is the end of the survey. Thank you for your responses. Please forward your answer form (courier envelope provided) to Michael Krupp, c/o Cocoa High School.

Sincerely,

Michael L. Krupp

APPENDIX B

FIELD TEST

October 5, 1988

Boone High School
Mr. Jesse Lane, Principal
Orlando, FL 32806

Dear Mr. Lane:

Thank you for allowing me to use your school for a field test of a survey instrument on Florida's R.A.I.S.E. and Education Reform legislation. I contacted your Associate Superintendent of Instruction, Mr. Lester McKinney, and he did give his approval for the field test.

I am enclosing a copy of the instrument for your perusal and use. The twenty statements given in the survey are based upon requirements of students and educators since the implementation of the R.A.I.S.E. (Raise Academics in Secondary Education) and Educational Reform Acts of 1983 in Florida. The statements have no right or wrong answer but merely ask for an attitude on a particular topic dealing with educational reform in Florida and your high school.

I would like to visit your school on Tuesday, October 18 and distribute the survey to your administrative team, counselors, and department chairpersons. Also, a stratified random sample of the students will need to be taken from each grade level (N=25) for this survey. I will bring all the necessary paperwork for completion of the instrument as well as the random numbers to identify the students in the survey. I would greatly appreciate your arranging for someone in your guidance office to have a membership roster (alpha by grade level) available when I arrive.

Thanks again for your cooperation. Should you desire a copy of the results of this field test, a copy will be provided to you in a timely fashion.

Sincerely,

Michael L. Krupp
Assistant Principal, Cocoa High School
Cocoa, Florida 32926

October 5, 1988

Orlando Jones High School
Ms. Clara Walters
Orlando, FL 32805

Dear Ms. Walters:

Thank you for allowing me to use your school for a field test of a survey instrument on Florida's R.A.I.S.E. and Education Reform legislation. I contacted your Associate Superintendent of Instruction, Mr. Lester McKinney, and he did give his approval for the field test.

I am enclosing a copy of the instrument for your perusal and use. The twenty statements given in the survey are based upon requirements of students and educators since the implementation of the R.A.I.S.E. (Raise Academics in Secondary Education) and Educational Reform Acts of 1983 in Florida. The statements have no right or wrong answer but merely ask for an attitude on a particular topic dealing with educational reform in Florida and your high school.

I would like to visit your school on Tuesday, October 18 and distribute the survey to your administrative team, counselors, and department chairpersons. Also, a stratified random sample of the students will need to be taken from each grade level (N=25) for this survey. I will bring all the necessary paperwork for completion of the instrument as well as the random numbers to identify the students in the survey. I would greatly appreciate your arranging for someone in your guidance office to have a membership roster (alpha by grade level) available when I arrive.

Thanks again for your cooperation. Should you desire a copy of the results of this field test, a copy will be provided to you in a timely fashion.

Sincerely,

Michael L. Krupp
Assistant Principal, Cocoa High School
Cocoa, Florida 32926
(305) 632-5300

A FIELD TEST OF THE R.A.I.S.E./REFORM OPINION SURVEY

Two public high schools in the Orlando, Florida, area were used as field test sites for the opinion survey used in this research. At the time of this study, William R. Boone High School was a 4-year high school with a total student population of 1,965; Orlando Jones High School was a 4-year high school with a student population of 1,174.

A random sample of each grade level for grades 9-12 (n = 25/grade), as well as all of the administrators, counselors, and department chairpersons were given the 20 statement opinion survey and response card. Table 32, Field Test Sites: Membership and Sample Taken, reflects the number of each sample by grade level and staff for the respective schools. One hundred surveys were given to the students of each test site selected within the Orange County public school district; seven surveys were given to the high school administrators, four to Boone High School and three to Jones High School. Counselors surveyed for Boone and Jones were four and three respectively with ten surveys being given to the high school department chairpersons of Boone High School and 12 surveys to those of Jones High School.

Table 32

Field Test Sites: Membership and Sample Taken

School Members	9th	10th	11th	12th	Adm	Coun	Teach
Boone	500	541	501	423	-4-	-4-	10
Sample Taken	26	20	25	28	-4-	-4-	10
Jones	388	334	257	195	-3-	-3-	12
Sample Taken	25	25	25	24	-3-	-3-	12
Total Sample	51	45	50	52	-7-	-7-	22

Note. Adm = Principal, Coun = Counselor, Teach = Teacher

Tests of Significance for Research Questions

The purpose of this field study was defined in terms of five research questions which involved the analysis of opinion surveys. This section addresses each question with regard to its statistical significance based upon the method of analysis used; all tests for significance were performed at the .05 level.

A one-way analysis of variance (ANOVA) was used for each research question for each of the field test sites.

Boone High School Field Test of Research Question One

Q. 1. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased minimum grade point average (GPA) needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 33, One-Way ANOVA: Increased GPA Requirements for Graduation, reflects the number, mean, and standard deviation for the grade levels of students and school staff at Boone High School. Results of the ANOVA did not indicate a significant difference of opinion with $p > .05$ for these groups of students and staff.

Table 33

One-Way ANOVA: Increased GPA Requirements for Graduation

GRADE (Boone H.S.)	N	MEAN	SD
Ninth	26	13.2692	2.7937
Tenth	20	12.6500	2.2775
Eleventh	25	12.2800	2.5087
Twelfth	28	12.2857	1.8828
Administrators	4	11.5000	2.3805
Counselors	4	13.5000	1.2910
Teachers	10	11.3000	3.0930

ANOVA Summary Table (Increased GPA for Graduation)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	40.7282	6.7880	1.1514	0.3378
Error	110	648.5197	5.8956		
Total	116	689.2479			

Boone High School Field Test of Research Question Two

Q. 2. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 34, One-Way ANOVA: Increased Number of Credits for Graduation, reflects the number, mean, and

standard deviation for the grade levels of students and school staff at Boone High School. Results of the ANOVA did not indicate a significant difference of opinion with $p > .05$ for the groups of students and staff at Boone High School.

Table 34

One-Way ANOVA: Increased Number of Credits for Graduation

GRADE (Boone H.S.)	N	MEAN	SD
Ninth	26	13.4615	2.7016
Tenth	20	13.6000	2.5629
Eleventh	25	13.2800	2.5580
Twelfth	28	12.5357	2.6315
Administrators	4	12.7500	1.5000
Counselors	4	12.0000	4.0000
Teachers	10	11.5000	2.9155

ANOVA Summary Table (Number of Credits for Graduation)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	47.4500	7.9083	1.1117	0.3602
Error	110	782.5158	7.1138		
Total	116	829.9658			

Boone High School Field Test of Research Question Three

Q. 3. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?

Table 35, One-Way ANOVA: Seven Period Day, reflects data concerning the relationship between opinions of students at different grade levels and school staff at

Boone High School. Results of the Anova did not indicate a significant difference of opinion with $p > .05$ for these groups of students and staff.

Table 35

One-Way ANOVA: Seven Period Day

GRADE (Boone H.S.)	N	MEAN	SD
Ninth	26	14.0385	3.4696
Tenth	20	14.6500	4.3441
Eleventh	25	14.1600	4.1601
Twelfth	28	14.7857	4.0857
Administrators	4	16.2500	2.8723
Counselors	4	13.5000	2.5166
Teachers	10	12.8000	4.1042

ANOVA Summary Table (Seven Period Day)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	51.5941	8.5990	0.5496	0.7693
Error	110	1720.9358	15.6449		
Total	116	1772.5299			

Boone High School Field Test of Research Question Four

Q. 4. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

Table 36, Extracurricular Activities, reflects the number, mean, and standard deviation for grade levels of students and school staff. Standard deviations ranged from a low of 2.67 for the eleventh grade to a high of

3.01 for the twelfth grade. Standard deviations for staff members ranged from 1.25 for administrators to 2.94 for counselors.

Table 36

Extracurricular Activities

GRADE (BOONE H.S.)	N	MEAN	SD
Ninth	26	14.2308	2.7467
Tenth	20	13.4000	2.8359
Eleventh	25	13.5600	2.6783
Twelfth	28	13.2500	3.0139
Administrators	4	10.7500	1.2583
Counselors	4	13.0000	2.9439
Teachers	10	10.8000	1.6193

Results of the one-way ANOVA for opinions surveyed as listed in table 37, ANOVA Summary Table (Extracurricular Activities), indicated a significant level of the F-ratio at .0237. Follow-up analysis as reported in table 38, T-test: Extracurricular Activities, was performed by *t*-tests for the between cell means. A significant difference was found between the ninth grade and principals where $p = .0189$ and between the ninth grade and teachers at $p = .0010$; between the tenth grade students and teachers at $p = .0151$; between the eleventh grade students and teachers at $p = .0077$ and between the twelfth grade students and teachers at $p = .0160$.

Table 37

ANOVA Summary Table (Extracurricular Activities)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	113.1323	18.8554	2.5506	0.0237
Error	110	813.1754	7.3925		
Total	116	926.3077			

Note. Significant where $p < .05$

Table 38

T-Test: Extracurricular Activities

t = 2.3836	(ninth grade)
p = .0189	(Principals)
t = 3.3910	(ninth grade)
p = .0010	(Teachers)
t = 2.4691	(tenth grade)
p = .0151	(Teachers)
t = 2.7130	(eleventh grade)
p = .0077	(Teachers)
t = 2.4460	(twelfth grade)
p = .0160	(Teachers)

Boone High School Field Test of Research Question Five

Q. 5. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 39, One-Way ANOVA: Academic Requirements, reflects data concerning the relationship between opinions of students at different grade levels and

school staff at Boone High School. Results of the Anova did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 39

One-Way ANOVA: Academic Requirements

GRADE (Boone H.S.)	N	MEAN	SD
Ninth	26	11.7308	2.2726
Tenth	20	10.8500	2.9961
Eleventh	25	9.6000	2.8431
Twelfth	28	10.1786	2.7896
Administrators	4	9.2500	4.0311
Counselors	4	11.0000	3.4641
Teachers	10	10.3000	2.4518

ANOVA Summary Table (Academic Requirements)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	51.5941	8.5990	0.5496	0.7693
Error	110	1720.9358	15.6449		
Total	116	1772.5299			

In table 40, ANOVA Summary of Variables for Boone High School, the F value for the variable titled "extracurricular activities" is identified as significant where $p < .05$ for Boone High School. Values for F were not significant for the variables titled "GPA," "# of credits," "seven period day," and "academic requirements."

Table 40

ANOVA Summary of Variables for Boone High School

Variable	MS Between[a]	MS Within[b]	F	p
GPA	6.7880	5.8956	1.1514	0.3378
# of Credits	7.9083	7.1138	1.1117	0.3602
Seven Pd. Day	8.5990	15.6449	0.5496	0.7693
Extracurricular Activities	18.8554	7.3925	2.5506	0.0237
Academic Req.	12.0957	7.6602	1.5790	0.1599

[a]df = 6
[b]df = 110

Jones High School Field Test

Jones High School Field Test of Research Question One

Q. 1. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased minimum grade point average needed for high school graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 41, One-Way ANOVA: Increased GPA Requirements for Graduation, reflects data concerning the relationship between opinions of students at different grade levels and school staff at Jones High School. Results of the ANOVA did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 41

One-Way ANOVA: Increased GPA Requirements for Graduation

GRADE (Jones H.S.)	N	MEAN	SD
Ninth	25	11.9600	2.8792
Tenth	25	11.8800	2.3861
Eleventh	25	12.5200	2.7556
Twelfth	24	11.9583	3.2768
Administrators	3	12.6667	3.0551
Counselors	3	13.0000	1.0000
Teachers	12	13.0000	3.1909

ANOVA Summary Table (Increased GPA for Graduation)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	18.1931	3.0322	0.3716	0.8956
Error	110	897.4650	8.1588		
Total	116	915.6581			

Jones High School Field Test of Research Question Two

Q. 2. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students toward the increased number of total credits needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 42, One-Way ANOVA: Increased Number of Credits for Graduation, reflects data concerning the relationship between opinions of students at different grade levels and school staff. Results of the ANOVA did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 42

One-Way ANOVA: Increased Number of Credits for Graduation

GRADE (Jones H.S.)	N	MEAN	SD
Ninth	25	13.2000	2.4324
Tenth	25	13.4000	2.1409
Eleventh	25	12.7200	2.3721
Twelfth	24	12.6250	1.9295
Administrators	3	11.3333	2.3094
Counselors	3	10.3333	4.6188
Teachers	12	13.3333	3.5760

ANOVA Summary Table (Number of Credits for Graduation)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	40.4803	6.7467	1.1132	0.3593
Error	110	666.6650	6.0606		
Total	116	707.1453			

Jones High School Field Test of Research Question Three

Q. 3. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the seven-period day since the Florida R.A.I.S.E. and Education Reform Acts?

Table 43, One-Way ANOVA: Seven Period Day, reflects data concerning the relationship between opinions of students at different grade levels and school staff at Jones High School. Results of the ANOVA did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 43

One-Way ANOVA: Seven Period Day

GRADE (Jones H.S.)	N	MEAN	SD
Ninth	25	12.0800	3.8936
Tenth	25	12.0000	3.5824
Eleventh	25	12.6400	3.7068
Twelfth	24	13.0000	3.4891
Administrators	3	15.6667	6.6583
Counselors	3	12.6667	5.5076
Teachers	12	13.9167	3.2879

ANOVA Summary Table (Seven Period Day)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	68.1500	11.3583	0.8062	0.5672
Error	110	1549.8500	14.0895		
Total	116	1618.0000			

Jones High School Field Test of Research Question Four

Q. 4. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward increased criteria for student involvement in extracurricular activities since the Florida R.A.I.S.E. and Education Reform acts?

Table 44, One-Way ANOVA: Extracurricular Activities, reflects data concerning the relationship between opinions of students at different grade levels and school staff at Jones High School. Results of the ANOVA did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 44

Field Test: One-Way ANOVA, Extracurricular Activities

GRADE (Jones H.S.)	N	MEAN	SD
Ninth	25	11.6800	2.7343
Tenth	25	11.8400	2.4947
Eleventh	25	11.8800	3.1533
Twelfth	24	12.8750	2.1328
Administrators	3	12.0000	3.0000
Counselors	3	10.6667	2.0817
Teachers	12	12.7500	1.6026

ANOVA Summary Table (Extracurricular Activities)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	32.9841	5.4974	0.8318	0.5478
Error	110	726.9817	6.6089		
Total	116	759.9658			

Jones High School Field Test of Research Question Five

Q. 5. Is there a statistically significant difference among the opinions of administrators, counselors, teachers, and students (grades 9-12) toward the required academic courses needed for graduation since the Florida R.A.I.S.E. and Education Reform acts?

Table 45, One-Way ANOVA: Academic Requirements, reflects data concerning the relationship between opinions of students at different grade levels and school staff (e.g., administrators, counselors, and teachers) at Jones High School. Results of the ANOVA did not indicate a significance of opinion with $p > .05$ for these groups of students and staff.

Table 45

One-Way ANOVA: Academic Requirements

GRADE (Jones H.S.)	N	MEAN	SD
Ninth	25	9.6000	2.7386
Tenth	25	10.0400	2.4062
Eleventh	25	9.4800	3.0017
Twelfth	24	9.0417	2.9411
Administrators	3	9.3333	6.1101
Counselors	3	9.3333	3.2146
Teachers	12	10.3333	3.2567

ANOVA Summary Table (Academic Requirements)

Source of Variation	df	Sum of Squares	Mean Squares	F	Significance Level
Grade Level	6	19.5340	3.2557	0.3785	0.8914
Error	110	946.1583	8.6014		
Total	116	965.6923			

In table 46, ANOVA Summary of Variables for Jones High School, the F was identified as not significant where $p > .05$ for Jones High School. Values for F were not significant for the variables titled "GPA" where F = .3716 at $p = .8956$; for "# of credits" where F = 1.1132 at $p = .3593$; for "seven period day" where F = .8062 at $p = .5672$; for "extracurricular activities" where F= 8318 at $p = .5478$; for "academic requirements" where F = .3785 at $p = .8914$.

Table 46

ANOVA Summary of Variables for Jones High School

Variable	MS Between[a]	MS Within[b]	F	p
GPA	3.0322	8.1588	0.3716	0.8956
# of Credits	6.7467	6.0606	1.1132	0.3593
Seven Pd. Day	11.3583	14.0895	0.8062	0.5672
Extracurricular Activities	5.4974	6.6089	0.8318	0.5478
Academic Req.	3.2557	8.6014	0.3785	0.8914

[a]df = 6
[b]df = 110

APPENDIX C

LETTER TO EDUCATOR SAMPLE

November 1, 1988

Dear Colleagues:

You have been selected to participate in an opinion survey of educational reform in the state of Florida. The statements given in the survey are based upon requirements of students and educators since the implementation of the R.A.I.S.E. (Raise Academics in Secondary Education) and Educational Reform Acts of 1983 in Florida. The statements have no right or wrong answer but merely ask for your "stand" on a particular topic dealing with educational reform in Florida and your high school.

Please take a few minutes to read over the twenty statement survey and darken your response for each statement on the NCS form provided. A return courier envelope has been enclosed for your convenience in handling. Should you desire a copy of the tabulated results, please contact me at the address listed below and I will forward this information to you as soon as possible.

Mr. Lloyd Soughers, Superintendent for Brevard County Schools, has given his approval for this solicitation. Thank you for your assistance.

Sincerely,

Michael L. Krupp
Assistant Principal
Cocoa High School
Cocoa, Florida 32926
(305) 632-5300

APPENDIX D

LETTER FOR STUDENT SAMPLE

November 1, 1988

Dear Colleague:

Your students have been selected to participate in an opinion survey of educational reform in the state of Florida. Enclosed is a stratified random sample by grade level of students active in membership for your school. Your principal has graciously agreed to provide your time and efforts in assisting me with this survey gathering of information.

The statements given in the survey are based upon requirements of students and educators since the implementation of the R.A.I.S.E. (Raise Academics in Secondary Education) and Educational Reform Acts of 1983 in Florida. The statements have no right or wrong answer but merely ask for a students' "stand" on a particular topic dealing with educational reform in Florida and their high school.

Please provide a gathering place for the students listed to take a few minutes to read over the twenty statement survey and circle their response on the NCS form provided for each statement. A return courier envelope has been enclosed for your convenience in handling. Should you desire a copy of the tabulated results, please contact me at the address listed below and I will forward this information to you as soon as possible.

Mr. Lloyd Soughers, Superintendent for Brevard County Schools, has given his approval for this solicitation. Thank you for your assistance.

Sincerely,

Michael L. Krupp
Assistant Principal
Cocoa High School
Cocoa, Florida 32926
(305) 632-5300

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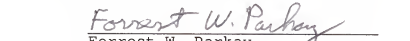
BIOGRAPHICAL SKETCH

Michael L. Krupp was born November 22, 1944, in Evansville, Indiana. After graduating from Salle Phillips Durrett High School in Louisville, Kentucky, he attended the University of Kentucky where he earned his B.A. in science education in 1967. After teaching for three years in Brevard County, Florida, Michael received a National Science Foundation grant to further his studies and ultimately earned his M.A.T. in science education in 1972 from the University of North Carolina, Chapel Hill, North Carolina. Michael returned to Brevard County, Florida, in 1972 to continue his teaching and administrative career and further his graduate studies via the University of Florida where he earned his Ed.S. degree in educational leadership in 1986 and his Ed.D. degree in 1989. Michael is currently employed by the Brevard County School Board, Titusville, Florida, as an assistant principal at Cocoa High School.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Phillip A. Clark, Chairman
Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.



Forrest W. Parkay
Associate Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Edward C. Turner
Associate Professor of Instruction and Curriculum

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

August, 1989

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